

JULY 1953

Business

THE JOURNAL OF MANAGEMENT IN INDUSTRY

CONTROLLING MAINTENANCE COSTS

See Page 60

TWO SHILLINGS & SIXPENCE





***Send for the
Man from
Remington Rand***

He has a wide personal experience of every branch of business, a specialist's knowledge of all office methods and technique.

He can implement his suggestions from the world's most comprehensive range of business machines, systems and equipment backed by specialist knowledge.

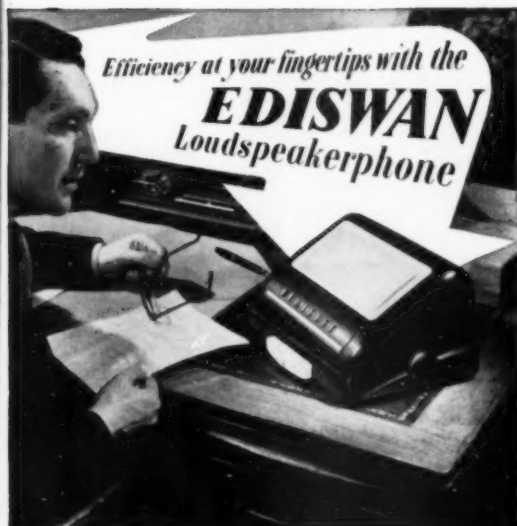
Remington Rand
**SYSTEMS - MACHINES
AND EQUIPMENT**

FOREMOST ACCOUNTING MACHINES
REMINGTON TYPEWRITERS
RENTICO OFFICE SUPPLIES
KARDEX VISIBLE RECORDS
SPEEDAC SUSPENSION FILING
SAFE CABINET AND SAFETIFILE
PHOTO-DOCUMENTATION EQUIPMENT
OFFICE FURNITURE AND PLANNING

. . the easier way to Office Efficiency

Write for booklet, "The Easier Way to Office Efficiency" to Dept. OE 14

REMINGTON RAND LTD., COMMONWEALTH HOUSE, 1 NEW OXFORD ST., W.C.1 Tel: CHAncery 4888



Right up to the minute in appearance and ease of operation, the Ediswan Loudspeakerphone is the most economical inter-office communication system available.

Write for a copy of booklet B100

PRICE

Standard Master Unit
for 6 extensions : **£22. 10. 0**
Extension Units (each) **£4. 5. 0**

EDISWAN LOUDSPEAKERPHONE

No purchase tax · No rentals

THE EDISON SWAN ELECTRIC CO. LTD.,
155 CHARING CROSS ROAD, LONDON, W.C.2

Member of the A.E.I. Group of Companies

BP100

Business

THE JOURNAL OF MANAGEMENT IN INDUSTRY

Contents for July

BUSINESS NEWS AND DEVELOPMENTS

The March of Business	37
People, Products and Places	39
Management at Work	54

POLICY AND MANAGEMENT

The Truth about Japanese Competition	P. F. Dyer	43
<i>Japan's export position surveyed and analysed from the standpoint of the British businessman</i>		
Wood Waste to Timber Board by Continuous Process		48
<i>Picture-story of a unique production development</i>		
How We Train Our Salesmen (I)	Brian Cummings	50
<i>First of a series in which executives tell how their firms are tackling this key problem.</i>		
<i>This month; Holbrooks, Ltd., and Harry Ferguson, Ltd.</i>		
His Fashion-sense Wins Exports	Leonard G. Rule	56
<i>Biography of Edward Rayne, chairman and managing director, H. and M. Rayne, Ltd.</i>		

INDUSTRIAL MANAGEMENT AND EQUIPMENT

The Measurement of Maintenance	A. G. Thomson	60
<i>Opening article of a series on controlling maintenance costs</i>		
How Incentives Raised Dealer's Sales	Julian Acomb	62

ADMINISTRATION AND OFFICE PRACTICE

Director's Office of the Month		64
How 'Figure Factory' Set Bonus Gradings	David Early	65
Punched Card System Checks Road Transport Costs	Richard Lawrence	71
New For Your Office		91

HEALTH-WELFARE-SAFETY-CANTEEN

Over-60s Help Local Industry	Patrick Gordon	81
Welfare Equipment		100
What is Your Canteen Staff Worth?	Winifred McCullough	85
Canteen Equipment		102

PROSPECT

economic supplement to BUSINESS

Month's Highlights and Trends		
Salient Figures of the Month		iii
Home Market Regional Surveys		v
State of the Nation: key figures in 23 charts		vi-vii
Export Market Notes		xi
Classified Guide to Advertised Equipment		2
Alphabetical List of Advertisers		104

Change of subscriber's address: Please inform the Publishers six weeks in advance of the issue for which change of address is to take effect, and include present address in full as well as new address

BUSINESS, Vol. 83, No. 7 (Incorporating "The Magazine of Commerce," "Modern Business," "System," "Business Organisation and Management," "Business News Digest" and "British Industrial Equipment"). Published monthly by Business Publications, Ltd., 180 Fleet Street, London, E.C.4. CHANCERY 8844. 30/- a year post free U.K.; 35/- Overseas.

ACCOUNT BOOKS

Carter-Davis, Ltd.	40
Copeland-Chatterton Co.	23
Jones, Percy, (Twinlock)	92
Lamson Paragon Supply Co., Ltd.	...

ACCOUNTING MACHINES

Burroughs Adding Mch.	5
Joeli Safe Co. (London)	100
Remington-Rand, Ltd.	...
Cover ii, 18	
Underwood Business Machines	42

ACCOUNTING SYSTEMS

Art Metal Construction	19
Copeland-Chatterton Co.	23
Kalamazoo, Ltd.	35
Lamson Paragon Supply Co., Ltd.	...
Roneo, Ltd.	...
Sankey-Sheldon, Ltd.	77
Shannon, Ltd.	77

ADDING MACHINES

Block & Anderson, Ltd.	15
Burroughs Adding Mch.	5
Office Machinery, Ltd.	28
Underwood Business Mchs.	42

ADDRESSING MACHINES

Addressall Machine Co.	79
------------------------	----

ADDRESSING MACHINE ATTACHMENTS

Fanfold, Ltd.	...
Lamson Paragon Supply Co., Ltd.	...
Roneo, Ltd.	...
Smith, W. H., & Son, Ltd.	73

ADVERTISING GIFTS

Hochfeld, Richard, (London), Ltd.	90
-----------------------------------	----

BLINDS

Avery, J., & Co.	83
------------------	----

BOOKS AND PUBLICATIONS

Pitman, Sir Isaac, & Sons	104
---------------------------	-----

BROADCAST MUSIC

Dictograph Telephones	21
-----------------------	----

BUSINESS ACCESSORIES

Coombs, H. A., Ltd.	95
Standard Office Supplies	24

CALCULATING MACHINES

Block & Anderson, Ltd.	15
Burroughs Adding Mch.	5
	36, 69

CANTEEN EQUIPMENT

Bartlett, G. F. E., Ltd.	84
Holoplast, Ltd.	87
Mabbott & Co., Ltd.	88
Peatless & Ericson, Ltd.	89
V. C. Panels, Ltd.	89

CLOAKROOM EQUIPMENT

Harvey, G. A., & Co.	93
----------------------	----

CLOCK'S WATCHMEN'S

Blick Time Recorders	11
Gent & Co., Ltd.	94
Synchronome Co., Ltd.	22

YOUR GUIDE TO

BUSINESS & INDUSTRIAL EQUIPMENT & SERVICES



COIN COUNTING MACHINES

International Coin Counting Machine Co., Ltd.	26
---	----

COMMERCIAL TRANSPORT

Morris Commercial Cars	29
------------------------	----

CONDENSERS

Telegraph Condenser Co., Ltd.	10
-------------------------------	----

CONTINUOUS STATIONERY

Carter-Davis, Ltd.	40
Copeland-Chatterton Co.	23
Egry, Ltd.	...
Fanfold, Ltd.	...
Hunt & Colleys, Ltd.	4
Lamson Paragon Supply Co.	...
Petty & Sons, Ltd.	70
Smith, W. H., & Son, Ltd.	73

CYCLE PARKS

Abix, Ltd.	96
Odoni, Alfred A., & Co.	28

DICTATING AND RECORDING EQUIPMENT

E.M.I. Sales & Servs., Ltd.	38
Ediphone Voice Writing Hartley Electromotives, Ltd.	7
Haycraft, M. & L., Ltd.	90
Office Machinery, Ltd.	28
Royal Typewriters	30
Trevor-Johnstone Co.	32

DRAWING OFFICE EQUIPMENT

Haycraft, M. & L., Ltd.	...
West, A., & Partners	14

DUPLICATING MACHINES

Block & Anderson, Ltd.	15
Ellams Duplicator Co., Ltd.	74
Gastner, Ltd.	31
Office Machinery, Ltd.	28
Roneo, Ltd.	...

ELECTRIC CLOCKS

Dictograph Telephones	21
Gent & Co., Ltd.	94
I.B.M. United Kingdom	72
Magneta Time Co.	18
Synchronome Co., Ltd.	22

ENVELOPES

Pirie Appleton & Co., Ltd.	13
----------------------------	----

FACTORY EQUIPMENT AND ACCESSORIES

Sankey-Sheldon, Ltd.	77
----------------------	----

FILING SYSTEMS

Art Metal Construction	19
Copeland-Chatterton Co.	23
Eltray Filing Systems, Ltd.	100
Jones, Percy, (Twinlock)	92
Remington-Rand, Ltd.	...
Cover ii, 18	
Roneo, Ltd.	...
Sankey-Sheldon, Ltd.	77
Shannon, Ltd.	77

FIRE PREVENTION

Nu-Swift, Ltd.	98
----------------	----

GUMMING AND GLUING MACHINES

Haycraft, M. & L., Ltd.	...
Cover iv	

HEALTH SERVICES

Freder Brothers	83
G.E.C., Ltd.	80
Lambart & Smyth, Ltd.	80
Saniguard Appliances	101

HEATING

Spiral Tube, Ltd.	83
-------------------	----

INDUSTRIAL CLEANING

B.V.C. & Engineering Co.	20
Columbus-Dixon, Ltd.	34
Furnoto Chemical Co.	102
Lamson Engineering Co.	16
Service Electric Co., Ltd.	95
Shell Chemicals, Ltd.	27

LABELS, TICKETS AND TAGS

Dapag (1943), Ltd.	6
--------------------	---

LETTER OPENING MACHINES

International Coin Counting Mch. Co., Ltd.	26
--	----

LIGHTING

G.E.C., Ltd.	99
--------------	----

LOOSE LEAF LEDGERS SYSTEMS

Art Metal Construction	19
Copeland-Chatterton Co.	23
Jones, Percy, (Twinlock)	92
Kalamazoo, Ltd.	35
Lamson Paragon Supply Co., Ltd.	...
Moore's Modern Methods	...
Ruddock, J. W., Ltd.	102
Shannon, Ltd.	77

MARKING EQUIPMENT

Cushman & Denison, Ltd.	26
-------------------------	----

MECHANICAL HANDLING

Lamson Eng. Co.	16
Moss, Wm., & Sons, Ltd.	16
Vicrolac, Ltd.	34
Wingrove & Rogers, Ltd.	25

MICROFILM

Edison Swan Electric Co.	1
--------------------------	---

NOISE PREVENTIONS

Burgess Products, Ltd.	98
Merchant Trading Co., Ltd.	20

OFFICE FURNITURE (STEEL)

Art Metal Construction	19
Cave, C. W., & Co., Ltd.	93
Evertaut, Ltd.	22
Harvey, G. A., & Co., Ltd.	93
Milners Safe Co., Ltd.	24
Office Machinery, Ltd.	28
Roneo, Ltd.	...
Sankey-Sheldon, Ltd.	77

OFFICE FURNITURE (WOOD)

Cave, C. W., & Co., Ltd.	93
Office Machinery, Ltd.	28
Shannon, Ltd.	77

OVERALLS

Wheeler, H., & Co., Ltd.	80
--------------------------	----

PACKING SUPPLIES

Britannia Folding Box	98
Enfield Box Co., Ltd.	14
Goshon, John, & Co.	76
Thompson & Norris Mfg. Co., Ltd.	...
Cover iii	

PAINTS

British Paints, Ltd.	33
----------------------	----

PARTITIONING

Abix, Ltd.	96
Art Metal Construction	19
Roneo, Ltd.	...
Sankey-Sheldon, Ltd.	77

PENSION CONSULTANTS

Hobbs Savill & Co., Ltd.	79
The Noble Lowndes Pension Service	Prospect viii

PHOTOGRAPHIC REPRODUCING EQUIPMENT

Edison Swan Electric Co.	1
Grant Production Co., Ltd.	78

PRINTERS

Petty & Sons, Ltd.	70
Tomkin, G. F., Ltd.	95

RUBBER STAMPS

Clarke, John T., & Son	24
------------------------	----

SAFES

Joeli Safe Co. (London)	100
Milners Safe Co., Ltd.	24
Remington-Rand, Ltd.	...
Cover ii, 18	

SEATING

Abix, Ltd.	9
Evertaut, Ltd.	2
Office Machinery, Ltd.	2
Vicrolac, Ltd.	3

STEEL STORAGE EQUIPMENT

Bawn, W. B., & Co., Ltd.	10
Copeland-Chatterton Co.	2
Dexion, Ltd.	1
Gascoigne Co., Ltd.	9
Harvey, G. A., & Co.	9
Milners Safe Co., Ltd.	2
Rocano, Ltd.	100
Roco Products, Ltd.	91
Roneo, Ltd.	...
Sankey-Sheldon, Ltd.	7
Westwood, Jos., & Co., Ltd.	91

TABULATING MACHINES

Cave, C. W., & Co., Ltd.	9
--------------------------	---

TELEPHONE AMPLIFIERS AND ACCESSORIES

Fonadek (Branson), Ltd.	28
-------------------------	----

TELEPHONES AND SOUND EQUIPMENT

Dictograph Telephones	21
Edison Swan Electric Co.	1
Gent & Co., Ltd.	94
Magneta Time Co., Ltd.	18
Reliance Telephone Co.	104
Synchronome Co., Ltd.	22

TICKET PRINTING MACHINES

Dapag (1943), Ltd.	6
I.B.M. United Kingdom, Ltd.	75

TIME RECORDERS

Blick Time Recorders	11
Dictograph Telephones	21
Gent & Co., Ltd.	94
Gledhill-Brook, Ltd.	30
I.B.M. United Kingdom	72
Magneta Time Co., Ltd.	18
Synchronome Co., Ltd.	22

TRANSFERS

Associated Transfers, Ltd.	101
----------------------------	-----

TYPEWRITERS AND ACCESSORIES

British Olivetti, Ltd.	17
I.B.M. United Kingdom	72
Imperial Typewriter Co.	3
Remington-Rand, Ltd.	18
Cover ii, 18	
Royal Typewriters	30
Taylor's Typewriter Co.	12
Typewriters, Ltd.	75
Underwood Business Mchs.	42

VENTILATING EQUIPMENT

Colt Ventilation, Ltd.	9
------------------------	---

VISIBLE RECORDS

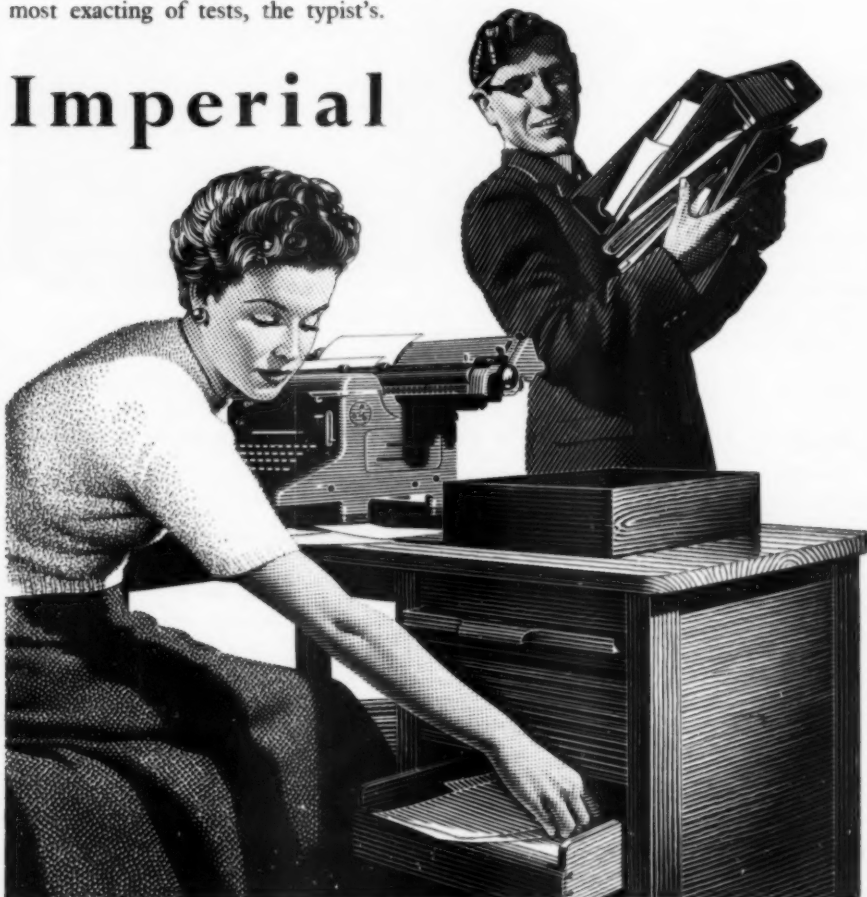
Art Metal Construction	19
Cave, C. W., & Co., Ltd.	93
Copeland-Chatterton Co.	23
Kalamazoo, Ltd.	35
Moore's Modern Methods	30
Remington-Rand, Ltd.	...
Roneo, Ltd.	...
Shannon, Ltd.	77
Cover ii, 18	

BUSINESS

ask the typist

She notices things about a typewriter that even a technician might miss, because eight hours of work every working day make her the best typewriter critic there is. Little things, like the free running of the ribbon and the setting of the margin, become very important after a day's work. And who is better fitted to judge these little and important things than the typist? Good design and precision engineering ensure that every Imperial typewriter will pass that most exacting of tests, the typist's.

Imperial



IMPERIAL TYPEWRITER COMPANY LIMITED · LEICESTER
CNC 11

paper rolls ?
paper rolls ?
paper rolls ?
paper rolls ?
paper rolls ?



Let us solve your problem now !

Our paper rolls fulfil all your
requirements for every type of
Adding, Accounting, Addressing, Telegraphic
and Statistical Machine.

They are made in any width or size, perforated,
plain or ruled, of consistent high quality, smooth working and economical in use.
Obtainable through your usual supplier, or write direct to us stating your requirements.



HUNT & COLLEYS LTD.

HUCKNALL ROAD · NOTTINGHAM · TELEPHONE: 61088/9

*Specialists in the manufacture of paper rolls for all Adding, Cash
Till, Telegraphic and Statistical Machines.*



THE CASE OF THE WHOLESALER'S BUDGET



Through their branches these wholesalers were supplying many thousands of retailers with foodstuffs. Their goods went out "on time, all the time." Could the accounts section keep pace?

Canned figs or canned figures . . .

which did the branches need first?

G. & W. COLLINS LIMITED, large wholesale food distributors, operate through branches in the North West. When they decided to concentrate buying and accounting operations in the Liverpool office they realized that more detailed and prompt information would be needed by their branches. Could they establish a more effective system of management-control now that the accounts were centralized?

With this problem Collins called for advice from machine accounting specialists of Burroughs Adding Machine Limited.

After investigation, Burroughs suggested the installation, in Collins' Liverpool office, of a Burroughs Typewriter Accounting machine for all Purchase and General Ledger work, with detailed posting of assets, revenues, liabilities and expenses.

Result: Apart from the great saving

in time and labour in the office (one girl, in fact, does all recording) Collins now get a *monthly analysis* of all expenditure in time for branch managers to keep within their individual budgets. Collins installed their first Burroughs machine twenty years ago, since then every accounting department of the business has been mechanized. The installation of the general-purpose accounting machine is the culminating factor in the preparation of speedy monthly accounts.

What about you? If your business could benefit from faster figuring, call in Burroughs. They can offer advice on all the latest systems, for Burroughs make the world's broadest line of modern record-keeping machines: Adding, Calculating, Accounting, Billing and Statistical Machines, and Microfilm Equipment. Remember, once you have any Burroughs machine

installed, Burroughs Service guarantees its continuous efficiency in operation.

The "Burroughs Man" is a trusted visitor to thousands of business houses. Call him at any time. Head Office: Burroughs Adding Machine Limited, Avon House, 356-366 Oxford Street, London, W.1. Sales and Service offices in principal cities.



Photographed here is Miss P. L. Langford, at work on the Purchase Ledger for G. & W. Collins Limited. She is operating the Burroughs Typewriter Accounting Machine, which helped to solve the Case of The Wholesaler's Budget.

For expert advice on business figures

CALL IN Burroughs





*"The name
Gentlemen is ...*

'Dapag'

The Specialists for **LABELS, TICKETS & TAGS**

Printed from

**THE ROLL
IN STRIPS
OR SINGLE**



Yet another executive has discovered that Dapag provide the complete answer to all label, ticket and tag requirements. Nearly every industry uses labels, tickets and tags—and Dapag serves them all.

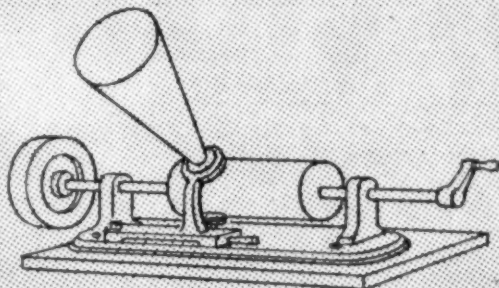
Why not get our representative to call and explain the advantages of the Dapag system.

DAPAG *Head Office: 7 & 8 OLD BAILEY, E.C.4. Tel: City 5373-6*

in 1877

THOMAS ALVA EDISON

amazed the world by
recording the human voice



*TODAY there is no quicker,
more economical method of
handling Memos—Reports—
Correspondence—than by*

Ediphone

•EDISON offers

ACOUSTIC or ELECTRONIC—CYLINDER or DISC
VOICEWRITERS

to suit your individual needs

THOMAS A. EDISON LTD., Victoria House, Southampton Row, London, W.C.1. Hol : 9988
Branches in all Principal Cities

We've waited YEARS to be able to offer you

DEXION

25% CHEAPER

- and IN STEEL!

Now that Steel Control is finished, Dexion Steel Angle is at last freely available on the home market. Bonderised against rust, stove-enamelled, and 20% stronger than the aluminium alloy, it costs only £15 per two hundred feet (less for orders of 1,000ft. and over).

For almost any kind of equipment in

factory, office or stores, Dexion Slotted Angle can save you time, labour and money. With Dexion STEEL you can save even more!

With both Steel and Alloy to choose from you can be sure that DEXION will do your job.



NOW IT PAYS MORE THAN EVER TO

Build your own equipment with

DEXION

S L O T T E D A N G L E

Just cut it
and bolt it
that's all!

Send for free sample and illustrated booklet K5 to

DEXION LTD. 189, REGENT ST., LONDON, W.1.

Phone : REGent 4841-5

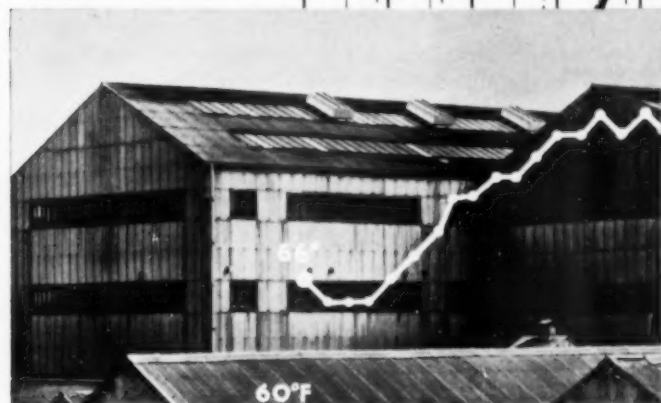
Dexion Angle is protected by Brit. No. 620696 and world patents.

Would you care to work for us in England, Canada or Australia? We have a number of excellent opportunities to offer young and capable men having an engineering background. Write to F. H. DEXION Ltd., 65 Maygrove Road, Kilburn, N.W.6, stating age, education and background.

At Laporte Chemicals Ltd...

VENTILATION BY

COLT



25.5.51

MINUS COLT

VENTILATION

Temperature on the top floor of a multi-storied building: 95 F.

Max 77°F

4.7.52

PLUS COLT

VENTILATION

Temperature on the top floor of the same building: 77 F.

The air conditions on the top floor of a multi-storied building at Laporte Chemicals Ltd. were unsatisfactory. Colt was approached. A survey by Colt's technical staff showed that the problem could be solved with the installation of eight SR/3080 High Duty Roof Extraction Ventilators... continuous, positive extraction with no running-costs or maintenance. The site was revisited a year after installation, on a day when the air temperature and relative humidity were similar to those prevailing during the original survey. Comparative readings were taken. And because of Colt ventilation, the top floor temperature showed a decrease of 18° F. Also, all floors of the building shared the benefit of the ventilators, which were extracting via stairways and open windows. Air Velometer readings showed that the average rate of extraction per Ventilator per hour was over 300,000 cubic feet. Many firms all over the country have cause to be grateful to Colt, for better working conditions mean less staff problems and higher, more efficient production.

FREE MANUAL with full specifications of the wide range of Colt Ventilators is available on request from

Dept. G.14/121

GROUND FLOOR	1ST FLOOR	2ND FLOOR	3RD FLOOR	TOP FLOOR
--------------	-----------	-----------	-----------	-----------

Many years' experience of all types of ventilation problems enables us to bring a supremely practical approach to the science of air induction and extraction. Whether your problem is one of improving existing conditions (with the minimum of interruption to production) or of planning new projects, our experts will be glad to co-operate at the earliest stages.

COLT VENTILATION

chosen by over 4,000 prominent firms

COLT VENTILATION LTD · SURBITON · SURREY · ELMbridge 6511-5
Also at: Birmingham, Bradford, Bristol, Cowbridge (Glam.), Dublin, Edinburgh, Liverpool, Manchester, Newcastle-on-Tyne, Sheffield and Warwick

SEE COLT ABOUT VENTILATION... WHATEVER YOU DO

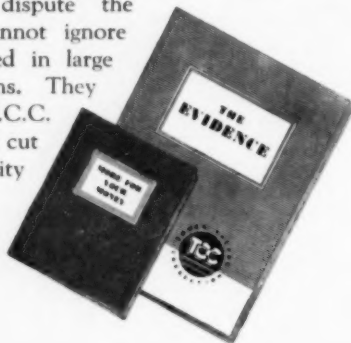
G.14

Says one industrialist:

*"We save £465
on electricity each year
without economies or
cuts in production"*

THIS is not an isolated or exceptional case. Many manufacturers are cutting their electricity bills by anything from 18% to 35% and more without major plant alteration or "cheese-paring" economies.

How is it done? Power Factor Correction by T.C.C. is the answer. If you would know more about this money-saving scheme that pays for itself in 12 to 18 months, write for the two free non-technical booklets "More for your Money" and "The Evidence". No one can dispute the "reasons why" and you cannot ignore the evidence of savings effected in large and small industrial concerns. They should convince you that a T.C.C. engineer can show you how to cut your bills and make electricity really work for you.



SPECIALISTS IN CONDENSERS SINCE 1906

THE TELEGRAPH CONDENSER CO LTD

INDUSTRIAL DIVISION · NORTH ACTON · LONDON · W.3 · Telephone: ACORN 0061 (9 lines)

ONCE a



USER

ALWAYS a



USER

BECAUSE



ARE

- ★ Strong, accurate and reliable
- ★ Up-to-date and Modern Looking
- ★ Built to last
- ★ Moderately priced
- ★ Backed by first-class service

That is why I.C.I., Shell, B.T.H., J. Lyons, Marks & Spencer, Meredith & Drew, Anglo-Iranian and other great names in industry bring their time control problems to us.

Write or 'phone today. Tell us your problem or give us your requirements and we will give you our advice, quotation and full particulars of the right model for YOU.

BLICK can supply a very wide range of Models—either mechanical (eight day) or electric—suitable for Factory Attendance Recording, for Office Attendance Recording (Signature type), for Job Timing and for the Time and Date-stamping of forms and documents.

BLICK Models range from the latest super-automatic Impulse-controlled metal-cased Electric Recorders suitable for large modern factories to the small simple Wood-case Recorders with eight-day spring-driven movements often preferred by smaller firms because of their cheapness.

BLICK TIME RECORDERS LTD.

96, ALDERSGATE STREET, E.C.1.

Telephone: **MONarch 6256/8**

Branches at Birmingham, Cardiff, Leeds, Manchester, Newcastle and Nottingham.

TAYLORS for all makes of TYPEWRITERS

★ **ADDING MACHINES**, Calculators and other Business Appliances
BOUGHT, EXCHANGED, HIRED AND REPAIRED.

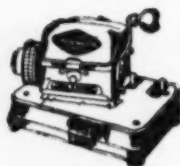


The "SUMMA" Portable Adding Listing Machine, simple to use. Adds and Subtracts from 1d. to £999,999 19s. 11d. Prompt Delivery from stock. Hand operated £78 15s. 0d. Electrically operated £99 15s. 0d. Free Delivery in U.K. FULLY GUARANTEED.

STOCKTAKING? Why not **HIRE** an **ADDER?**



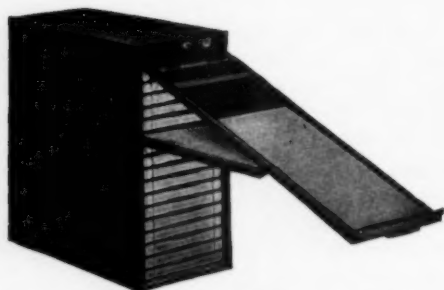
ROTARY CALCULATORS, ALL MAKES. For all calculations. Multiply, divide, add and subtract in 1/10th time taken to do so mentally.



ELIMINATE LOSS AND FRAUD by using a "SAFEGUARD", the best cheque protector. Used by leading banks and firms. Do you realise that an altered cheque is your own liability? Price £18 18s. All makes of Cheque Writers at keen prices.

EMPIRE *Aristocrat*

The Smallest and Lightest Portable Typewriter on the Market. £19 19s. 0d., with case. Fully Guaranteed.



VISIBLE INDEX SYSTEMS: KARDEX, etc.,
for sale at Keen Prices.



NO MORE ERRORS & IF YOU USE THE GUARANTEED ADDOMETER. Rapid Automatic Addition and Subtraction. Rests flat on the books. For Decimal or Ordinary Figures and Feet and Inches, etc. FOR POCKET OR DESK. So simple anyone can use it. In plush lined duco case. Size: 11½" x 2½" x ½". When ordering state for what purpose required. All models price £7 with case.

WANTED TO BUY: Modern Office Machinery: Adders, Calculators etc. Top Prices paid.

TAYLOR'S TYPEWRITER MARKET

Write, Call or Phone **HOLBORN 3793**

74 CHANCERY LANE (Holborn End) LONDON, W.C.2. and at Maidenhead

Meet GREGORY TWINGE

LIKE EVERY AMATEUR BALLAD-MONGER, Gregory Twinge needs a stout, generously-gummed envelope* to mend his piece of music with the flap of.

Twinge is held in high esteem by accompanists, first because he owns a piece of music at all, and does not, like many amateur ballad-mongers, mutter the tune hoarsely in the pianist's ear and without more delay strike off at a great pace in six sharps, secondly because his music is in such an impeccable state of repair.

This is pure altruism on Twinge's part. He himself cannot read the stuff, and after upwards of three hundred renderings of a single-item repertoire there is no point in starting now. But pianists are different.

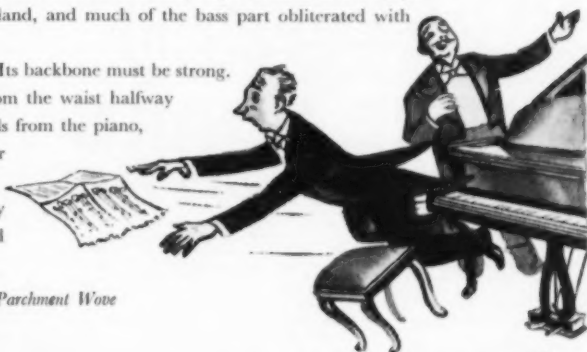
Pianists are temperamental.

They do not mind a piece of music yellowed with age, spongy to the touch, with corners long fallen victim to the turner-over's zeal, edges serrated into a rough chart of the West Coast of Scotland, and much of the bass part obliterated with stamp-edging . . .

But they do like it to stand up. Its backbone must be strong. When a piece of music bows from the waist halfway through the first refrain, and falls from the piano, instinctively folding itself into four on the way, a pianist gives up.

That is why, like every amateur ballad-monger, Gregory Twinge needs a stout, generously-gummed envelope to mend his piece of music with the flap of.

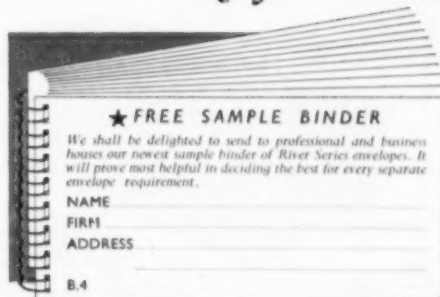
**One of the RIVER SERIES for preference. A handsome Avon Parchment Wove would be simply grand for Gregory, our fictitious singer.*



There are several features that distinguish River Series from ordinary envelopes—their smart modern "Square Cut" appearance—all have generous gumming of flaps and wide overlap of seams to provide security—and all are made from British high-quality papers. Your local Stationer or Printer will readily arrange supplies.

River Series envelopes

THERE ARE OVER 260 different sizes and shapes of Manilla, Cream Laid, Air Mail, Cartridge and Parchment envelopes in the 'River Series' range.



PIRIE, APPLETON & CO LTD · CHADWELL HEATH MILL · ESSEX

JULY, 1953

13

LIGHT...
TOUGH...
So Easy to Handle!



ENFIELD
FIBRE BOARD
BINS, TRAYS and BOXES

Speed up the handling of goods inside your stores or factory, reduce fatigue and cut down accidents by using ENFIELD FIBRE BOARD Conveyor Bins and Stacking Trays. Infinitely lighter and less expensive than metal or wood, they have no sharp corners to cut or rough edges to splinter. Yet they are immensely strong, made to stand rough handling day in and day out without damage to themselves or their contents. ENFIELD containers for all industrial purposes can be supplied to your own specification. Write to-day for details.

A typical Enfield Stacking Tray as supplied to De Havilland Aircraft Co. Ltd. and many leading firms.



ENFIELD
 BOX COMPANY LIMITED

Queensway, Enfield, Middx.
 'Phone: Howard 1888 (2 lines)
 Manufacturers of Polar Expedition Boxes.

map and
 plan mounting
 at **WEST**



THE FIRST-CLASS JOB speaks for itself! . . . something to remind you perhaps of clean sheets newly aired! Smooth your hand across its surface. *There* is strength and durability, fine finish, fitness for its special purpose. . . . The greatest care is necessary. No two lots of paper are exactly alike. Papers, cottons and mounting boards vary in tensile strength and shrinkage factor. A particular glue will suit one job—only a certain paste can be trusted for another. Generations of craftsmen have handed on knack and knowledge of this kind at WEST; we are constantly experimenting, testing, making sure!

Perfected processes include joining and mounting maps and plans of all sizes on to paper, cotton and board; providing and fixing roller-and-ledge fittings; fixing to spring rollers; mounting flat or cut to fold as for road maps; providing and fixing large wooden strainers as for theatre and exhibition displays; expert repair of torn and dilapidated documents; binding reports and estimates into book form; edge-binding with 'Byndite' or silk; and varnishing and we welcome new problems!

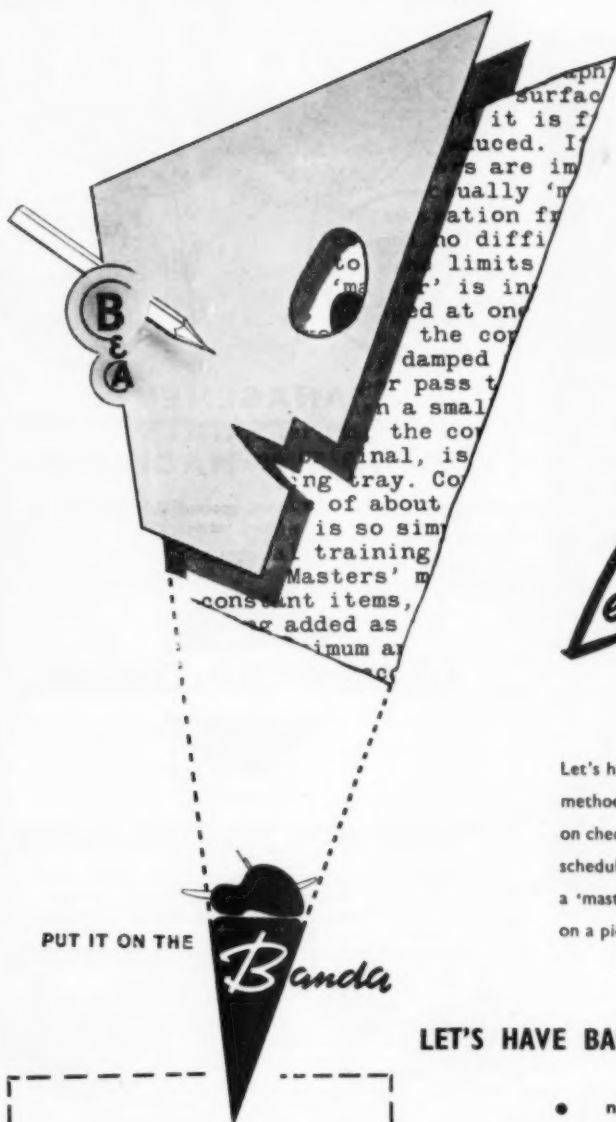
WESTY SAYS: We specialise in mounting up competition work—faultless presentation is so important.



In the field of map and plan mounting

WEST understand your problems

A. WEST & PARTNERS LTD. · 4 ABBEY ORCHARD STREET · LONDON · S.W.1
 TELEPHONE: ABBey 3323



PUT IT ON THE

Banda

Please send me illustrated
leaflets with details and prices
of BANDA

Name _____

Address _____

(11)

*Let's have every copy
easy to read*

Let's have done with poor copies from old fashioned copying methods; let's have no more inaccuracies, or waste of time on checking and rechecking; let's have copies of reports or schedules, plans or drawings, memos or minutes etc. — from a 'master' that involves little more than typing or drawing on a piece of paper; let's have colour as simply and cheaply as black and white — without ink or stencils.

LET'S HAVE BANDA — for copies we can read !

- no trained operator required.
- 3 to 300 copies from one 'master.'
- up to seven colours in one operation.
- only paper, fluid and transfer sheets used.

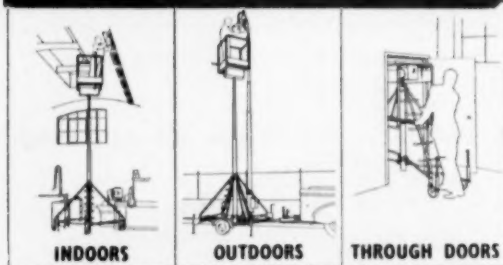
POST THE COUPON FOR FULL DETAILS

BLOCK & ANDERSON, LIMITED

58-60 Kensington Church Street, London, W.8.

Rise
to the
occasion
with
the

"BEANSTALK"
A MOSS ACCESS TOOL



One man with a "Beanstalk" can reach any job up to a height of 18 to 30 ft., according to model. Raised and lowered by a telescopic ram, manually operated from the platform by means of a powerful hydraulic pump, the "Beanstalk" is sturdy and stable, yet highly mobile, and will span fixed objects in order to reach the most awkwardly-placed jobs in a few moments. In folded position it will pass easily through the average doorway.

Write for Leaflet R5 to:-

WM. MOSS & SONS LTD.

(Mechanical Developments Division)

BRAEMAR AVENUE, NEASDEN, N.W.10. Tel. GLAdstone 8283/4
Telegrams: "ACCESEQUIP" LONDON

TAS255



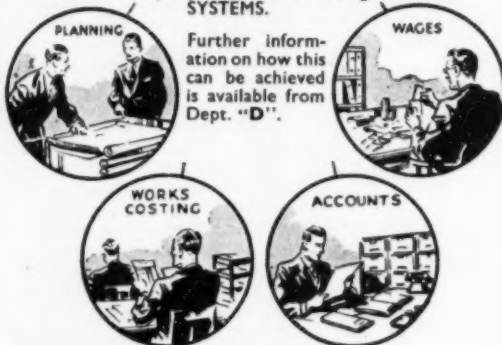
MANAGEMENT MATERIALS MEN AND MACHINES

All progress swiftly and economically towards a planned result



PNEUMATIC CARRIER TUBES

accelerate methods and paper work. Direct and speedy transport of documents, cost cards, invoices, etc. is always possible when using LAMSON SYSTEMS.



Further information on how this can be achieved is available from Dept. "D".

LAMSON ENGINEERING Co., Ltd.

HYTHE ROAD, WILLESDEN, LONDON, N.W.10.

Tel: LADbroke 2424.

Grams: Kelywil, Harles, London.

olivetti

Olivetti products have a world wide reputation for excellence of design, workmanship and performance.

M 44

M 44 STANDARD TYPEWRITER available in six carriage lengths and a choice of type faces; automatic margin setting; automatic tabulator; perfectly aligned typing of remarkable clarity. *Made in Great Britain.*



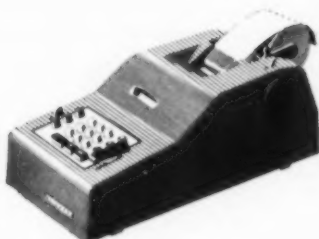
LETTERA 22 PORTABLE TYPEWRITER

LETTERA 22 PORTABLE TYPEWRITER has all the features of a standard office machine, yet weighs under 8½ lb. Supplied complete in Airline de luxe carrying case. *Made in Great Britain.*



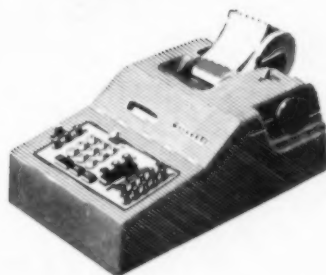
ELECTROSUMMA

ELECTROSUMMA Electrically operated sterling adding/ listing machine. Capacity 10/11 columns. Direct subtraction and credit balance.



DIVISUMMA

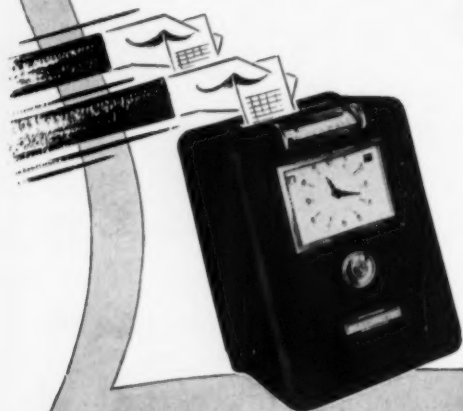
DIVISUMMA PRINTING CALCULATOR adds, subtracts, multiplies and divides, gives credit balance, and prints its own record of the calculations. Capacity 10/11 columns.



Write for details **BRITISH OLIVETTI LTD**

10 BERKELEY SQUARE W.1. TEL: GRO 6161

THE **M.16** SAVES THAT MINUTE *which saves Pounds*



The Time Recorder that:—

- ★ Increases production hours
- ★ Saves money
- ★ Pays for itself in two or three years

Write for full facts to Department B/N/1

THE MAGNETA TIME CO. LTD
GOBLIN WORKS, LEATHERHEAD, SURREY
ASHTED 846 (8 lines)
London Office: 6 GT. QUEEN ST. W.C.2 • HOL. 9762-3

Remington

The World's
busiest
Typewriter

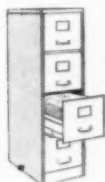


Steel

CABINETS

..... Amongst a wide range are

4-drawer files,



quarto or foolscap, with or without lock



an 11-drawer double-compartment file for 5 x 3 cards . . .

or a 9-drawer for



6 x 4 cards A 7-drawer for

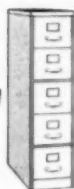


8 x 5 cards . . . and a 22-tray file



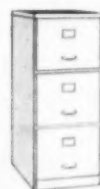
for punched cards . . .

There's a



5-drawer 10 x 8 file . . . and there's the "Jumbo"

Model for X-ray films and extra large documents . .



Phone Sloane 5201



or write 201, Buckingham Palace Rd.



S.W.I. . . . Ask for catalogue 602



SPECIALIST
ADVISORY
SERVICE

MeTCo

BACKED BY
34 YEARS'
EXPERIENCE

For . . .

**Structural
INSULATION**
of Factories, Warehouses, etc.



For . . .

**SOUND (ACOUSTICAL
TREATMENT)
ABATEMENT**
in Buildings, Offices, etc.



For . . .

**Industrial
FLOORING**
which is non-slip, ductile, dustless and hard-
wearing, using 'Indasco' Bitumen Emulsion.



We offer you complete service "from the drawing board to the finished job". Your enquiries are invited on any problem relating to the above 3 items.

THE MERCHANT TRADING COMPANY Limited
EFFINGHAM HOUSE, ARUNDEL STREET, STRAND, LONDON, W.C. 2
Telegrams "Thomatrade, Strand, London" Telephone TE4494 (8 Lines)

QUIZ

...FOR MEN
IN EXECUTIVE
POSITIONS

1. How can you clean moving machinery without touching it?
2. How can you load, convey and bag, cement without polluting the air with dust?
3. How can you quickly and efficiently drain machine sumps which have no bottom outlet?
4. How can you best reclaim valuable dusts?
5. What is the most efficient way to groom a horse?

Answers to all these questions will be found in an informative booklet 'The Versatile Vacuum'—all about modern methods for removing, conveying and reclaiming of industrial dusts and fragments. May we send you a complimentary copy?

B.V.C.
BRITISH VACUUM CLEANER

**INDUSTRIAL VACUUM
CLEANERS**

THE BRITISH VACUUM CLEANER & ENGINEERING CO. LTD.
(Dept. 1/A1) GOBLIN WORKS, LEATHERHEAD, SURREY.



She's your Ambassador

Your goodwill is in her hands! But no telephone operator can please all your clients unless she is backed by up-to-date inter-office communications . . .

. . . The Dictograph Internal Telephone System will ensure thought-quick-contact within your organisation and relieve the switchboard of all internal telephone calls . . .

. . . Whilst the "Dicto-Call" Staff Location System instantly finds those "Elusive Pimpnells" who are absent from their desks when important trunk calls are awaiting them. Your Operator no longer has to ring extension after extension and disrupt people at their work to locate the person who is being called.

Your Telephonist is only human; she may get curt with clients if she's overworked. Don't let it happen to you! Write or 'phone for full details of our systems.



Originators of loudspeaking telephones

DICTOGRAPH TELEPHONES LIMITED

CHIEF SALES OFFICE: 200 ABBEY HOUSE, WESTMINSTER, SW1 • ABBEY 5572 • BRANCHES THROUGHOUT THE COUNTRY

INTERNAL TELEPHONES • STAFF LOCATION AND INDUSTRIAL MUSIC BROADCAST • IMPULSE CLOCK AND TIMING SYSTEMS

THREE LINKS TO GREATER EFFICIENCY





SYNCHRONOME

IMPULSE TIME SYSTEM

will solve these inseparable problems for you

Any time-controlled installation supplied on purchase outright or rental terms.

THE SYNCHRONOME CO. LTD.
 ABBEY ELECTRIC CLOCK WORKS
 MOUNT PLEASANT, ALPERTON, MDX.

Tel.: WEMbley 3643

AGENTS IN THE BRITISH ISLES

SCOTLAND: Messrs. Ellis & McDougall, 101 West Regent Street, Glasgow, C.2. Telephone: Glasgow Douglas 6566.

NORTHERN IRELAND: Messrs. F. C. Duncan & Co., 20 Church Street, Belfast. Telephone Belfast 29086.

IRE: Messrs. Maalam, Roddy & Co., 11 Crow Street, Dublin. Telephone: Dublin 73427.



Seating Through the Ages

The ducking stool was an effective if lusty deterrent to the nagging wife but by no stretch of the imagination could it be termed comfortable. Most people prefer a seat designed for sitting upon—a seat which is comfortable because it

has been anatomically designed—in fact an Evertaut Seat.



The Evertaut range is wide enough to provide the correct seating for practically all workers irrespective of their job—When it comes to seating don't 'duck' the problem—ask Evertaut.

Please write for catalogue 2B

EVERTAUT LIMITED

THE SCIENTIFIC
 APPROACH TO
 MODERN SEATING

(Proprietors J. B. BROOKS & Co. Ltd)

WALSALL ROAD • PERRY BARR • BIRMINGHAM, 22b.

'Phone: BIRchfields 4587 (4 lines)

'Grams: "Evertaut Birmingham"

London Office: KERN HOUSE, KINGSWAY, W.C.2. Phone: HOL 0238

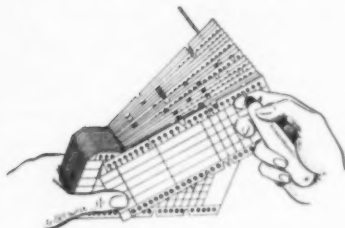
Transaction Record
Traveller's Report Card
Sales Summary
Lines Sold Signalled
Traveller's Card Signalled "Out"
Month's Last Order Signalled

Record Sales . . .

With
COPEDEX VISIBLE INDEX
and PARAMOUNT
PUNCHED CARDS . . .

Comprehensive records
giving complete details of
sales with product and area
analysis, etc. . . essential for

SALES CONTROL



Contact
COPE-CHAT

THE COPELAND - CHATTERSON CO. LTD.

London Office & Showrooms: Exchange House, Old Change, E.C. 4

Telephone : CITY 2284

Registered Office & Works—STROUD, GLOS.

Branches at : Birmingham, Bristol, Glasgow, Leeds, Leicester, Liverpool, Manchester,
Newcastle-on-Tyne, Sheffield and South Wales. Agent in Eire, 63, Clanbrassil St., Dundalk.
Agents throughout the world.

An important desk for important people

The
'MILCRAFT'
double pedestal
desk



All the good points that you have ever seen — in any desk anywhere — have gone into the making of the Milners 'Milcraft'. Distinguished in every feature, from capacious knee room to the adjustable levelling screws on the base, the 'Milcraft' will give you the scientific maximum in effortless efficiency.

Milners

THE FINEST STEEL EQUIPMENT YOU CAN BUY

For further details phone, write or call

MILNERS SAFE CO. LTD., HOLBORN VIADUCT, LONDON, E.C.1.

Telephone: CENTRAL 0041/5

Detail

- It is 60" x 34" x 30½".
- All drawers are interchangeable and filing drawers run on ball-race suspension slides and are of foolscap width.
- Box drawers can be fitted with adjustable divisions and trays as required.
- Filing drawers can be fitted with the Mil-Span Suspended Pocket Filing System.
- Centre drawer locks all other drawers and has a special rounded tray for loose pencils, paper clips, etc.
- 2 pull out shelves in front.
- Detachable waste paper bin between pedestals.
- On uneven floors the desk can be levelled by adjustable screws on the base.
- All corners are rounded to eliminate torn clothes.
- Top has special plastic covering.
- Back is recessed for a secretary's use.
- There are single pedestal desks and office tables in various sizes to match.

RUBBER & METAL MARKING DEVICES



- Send for 96 page Fully Illustrated Catalogue

John T. Clarke & Son Ltd
60 CHARLES STREET
MANCHESTER, 1

Telephone: ARDwick 1515-6-7

KOPE-CREME

Antiseptic Handstain Remover



Quickly Removes Ink Stains caused by handling Printing Machines, Duplicators, Typewriter Ribbons, Carbons, Ball Pens, Stamp Pads, etc.

Rub a little KOPE-CREME into the Dry stained hands, and when loosened wipe clean with a duster.

For excessive staining squeeze an inch or more, rub in and rinse off with water.

Retail Price 3/- per Tube
TAX FREE



Supplied in
Cartons of 1
Dozen Tubes

Also in Liquid form 4oz 3/-, 8oz 5/-, 20oz 10/6 Bottles

The **Standard**
OFFICE SUPPLIES COMPANY
57, FARRINGDON ROAD LONDON E.C.1.

BUSINESS

Why waste time space & money?



In these competitive times, many manufacturers fight shy of adding to current expenditure more than is absolutely necessary. Yet some kind of mechanical handling is, in most factories, a vital necessity resulting in savings which completely repay the initial outlay.

.. save all three with  Trucks

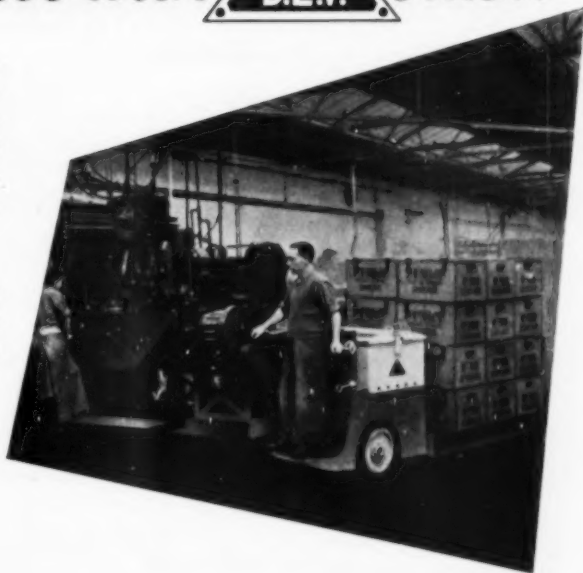
Illustrated here under typical working conditions is the E116 Elevating Platform Truck. In operation, it is run under the stillage, lifts it, and is instantly moved off to its destination. By eliminating floor congestion and production bottlenecks, far-reaching economies can be made.

We manufacture all types of trucks, including High Lift Fork Trucks, Leader Trucks, Tractors and Mining Electric Locomotives. If you have a 'handling' problem why not let our technical staff help you?

WINGROVE & ROGERS LTD.

DEPT. B/E

ACORNFIELD ROAD, KIRKBY TRADING ESTATE,
Nr. LIVERPOOL · Telephone: SIMONSWOOD 2237
and BROADWAY COURT, BROADWAY, LONDON, S.W.1
Telephone: ABBEY 2272



£1200 SILVER IN ONE HOUR!

it goes in MIXED...



it comes out COUNTED

That's the time-saving labour-saving job that the ICC Type F4 will do for you—with absolute accuracy. Works in denominations of 6d, 1/-, 2/-, 2/6. It's electrically operated and a junior can tend it. Needs only 3 ft. x 3 ft. 6 ins. floor space.

SORTED

RECORDED



International Coin Counting Machine Co. Ltd.
Alexandra Road, Enfield, Middlesex
Phone: Howard 1886

Makers of letter-opening, envelope-sealing,
coin-counting and token-counting machines

*A thousand uses
for this versatile*

FOUNT^NBRUSH

in your works

NEW!

Limitless in its applications... easy to use... and with its own self-contained store of fadeless waterproof ink, the Flo-master FOUNT^NBRUSH cuts time and effort wherever quick, legible displayed writing or drawing is needed.

Ideal for use in Stores, offices, studios, factories, etc., for such widely differing purposes as advertisement layout on one hand and the addressing of parcels on the other.

Thickness can be varied between a fine line and a width of 1" and the smooth, even, automatic valve feed controls ink-flow to a nicety, merely by degree of pressure... and it's so simple. Everyone can find a use for it, even the Managing Director.

Order a Flo-master NOW... try it out in the various branches of your business—and you'll be back with a bulk order!

Stocked by your usual stationer or artists materials dealer. If you have difficulty in obtaining the Flo-master send your remittance direct to Cushman & Denison Co., Ltd., Dept. G, 124 Vassall Road, London, S.W.9.

Send for illustrated leaflet.

Flo-master is complete with three felt nibs (giving three alternative sizes), one bottle of ink and a filler.

24/6
TAX PAID

Flo-master
BRITISH MADE
FOUNT^NBRUSH

Manufacturers Cushman & Denison Co., Ltd., 124 Vassall Rd., London, S.W.9. Telephone: RELiance 4172.



Clean right through with

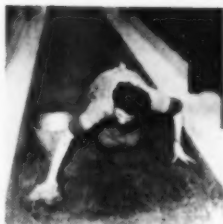
Teepol

**now available
to commercial users
in 4-gallon cans**

TEEPOL—Shell's master detergent—swiftly kills all grease, suspends dirt, leaves spotless and smearfree every surface to which you can safely apply water. The unrivalled and unvarying effectiveness of TEEPOL means speedier, easier, more thorough and *more economical* cleaning everywhere. The first 4-gallon can will convince you of TEEPOL'S outstanding value!

TEEPOL (Liquid) is supplied in 4-gallon cans fitted with a special economy pouring device; also in 45-gallon drums and 1-gallon cans. Distribution is country wide, thus ensuring rapid service.

Write for free illustrated booklet giving practical advice on the uses of TEEPOL, and price list, to any Divisional Sales Office of Shell Chemicals Limited.



Shell Chemicals Limited

Divisional Sales Offices: Walter House, Bedford Street, London, W.C.2 Tel: Temple Bar 4455
42 Deansgate, Manchester 3. Tel: Deansgate 6451. Clarence Chambers, 39 Corporation Street,
Birmingham 2. Tel: Midland 6934. 28 St. Enoch Square, Glasgow, C.1. Tel: Glasgow Central 9361.

"TEEPOL" is a Registered Trade Mark.

CUT YOUR COSTS WITH THESE!

● CONTEX

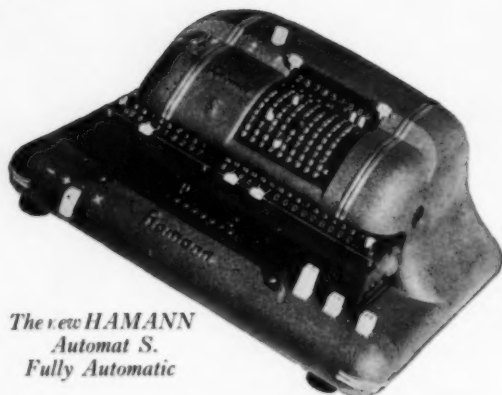
The Fastest, Neatest Adding Machine.

● HAMANN

The Leading Calculator.

● REX RECORDER

The Easiest to Use Dictating Machine.



The new HAMANN
Automat S.
Fully Automatic

OFFICE MACHINERY LTD.

22 KINGLY STREET - LONDON, W.1 - May. 1928

It's as simple as this . . .



Lift the G.P.O. receiver . . . place it on the FONADEK . . . continue your work . . . free to carry on the longest conversation without loss of productive time. Needs no special attachment; completely automatic. A.C. mains or battery operated, standard valves, highest-class speech-frequency loud speaker, adjustable volume. Carefully designed out-going speech bowl. Guaranteed.



Worth an extra pair of hands

PHONE WITH THE
FONADEK
TRADE MARK

Illustrated folder on request from:

FONADEK (BRANSON) LTD.
Dept. B.I., Vivian Road, Birmingham, 17. Phone: HARborne 2267

6675

PARK YOUR CYCLES THE ODONI WAY

(REGD. TRADE MARK)

With Odoni Patent "All-Steel" BICYCLE STANDS

Types to suit all possible requirements
Single or Double-Sided Horizontal or Semi-Vertical
For Indoor and Outdoor use.



TYPE 10
DOUBLE SIDED
SEMI-VERTICAL
OUTDOOR
STAND, BUILT
WITH CLOSE
RACK
ARRANGE-
MENT (CYCLES
AT 12"
CENTRES)

Write for fully illustrated leaflet and price list to
Sole manufacturers and Patentees.

ALFRED A. ODONI AND CO. LTD.,
404-5 SALISBURY HOUSE, FINSBURY CIRCUS,
LONDON, E.C.2

Tel. No.: (WORKS: LONDON, N.W.) Tel. Add.:
MONarch 8638-9 Odoni, Ave., London

The

MORRIS-COMMERCIAL

1½ TON CHASSIS



The best for any BODY!

The Morris-Commercial 1½ tonner is the toughest standard drop-sided truck on the market. Its all-steel, **three-seater** double-skin roofed cab is fitted with wide bench seat, the driver's section being upholstered in Dunlopillo. These are features usually associated only with "big truck" practice.

As a drive-away chassis complete with front end scuttle and windscreen pillars, it forms the ideal basis for a wide variety of body styles.



MORRIS COMMERCIAL CARS LTD.,
ADDERLEY PARK, BIRMINGHAM, 8.
Overseas Business: Nuffield Exports Ltd.,
Oxford and 41, Piccadilly, London, W.1.





"If ONLY I could have a ROYAL"

For speed, clarity and reliability there is nothing to equal a Royal. Every machine is backed by the efficient Royal service. Until new Royal typewriters are available, this service awaits your request.

ROYAL
Trade Mark
WORLD'S No. 1 TYPEWRITER
Electric, Standard and Portable

The outstanding dictating machine of today—

Dimafon

Demonstration given without obligation. Write or 'phone to

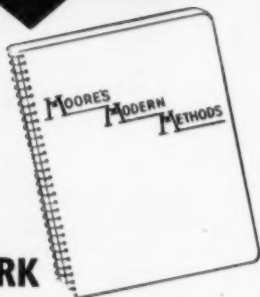
ROYAL TYPEWRITERS, 27 Bankside, London, S.E.1

Telephone: WATerloo 7551/8

Branches and agents throughout the British Isles

FREE

193 - page
BOOK
ON
OFFICE WORK



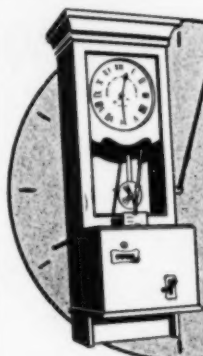
TO BONA-FIDE BUSINESS ENQUIRERS

Contents include—

Illustrations of 70 Accounting and Record-keeping Forms with notes on their use ● Indexing Methods ● Visible Records ● Machine Accounting ● Loose-leaf Systems ● P.A.Y.E. and Wages ● Binders for every office job and for advertising matter

Just send your letter-heading or business card marked "Book No. 1155A"

MOORE'S MODERN METHODS, LTD.
19-21 FARRINGDON ST., LONDON, E.C.4



**MINUTES
MEAN
MONEY**

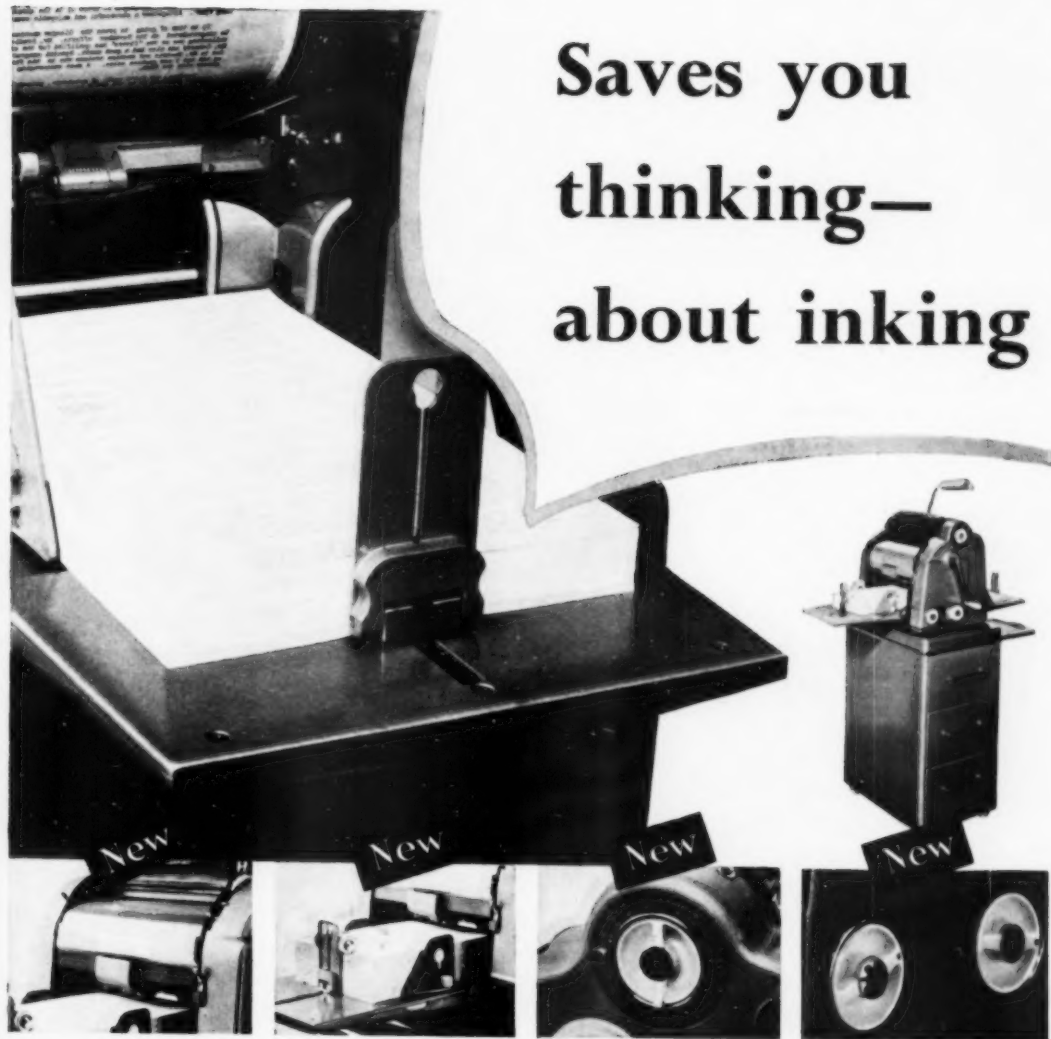
Waste of any kind is uneconomic. Waste of time in the present industrial situation, is a most serious form of waste. The Gledhill-Brook Recorder checks time at every minute of every hour and provides a permanent, detailed record for analysis and filing. There is a Gledhill-Brook System for every worker and every job in industry.

GLEDHILL-BROOK
TIME RECORDERS AND COSTING SYSTEMS

Enquiries to:

GLEDHILL-BROOK TIME RECORDERS LIMITED
38 EMPIRE WORKS - HUDDERSFIELD

Saves you
thinking—
about inking



The heart of the matter . . . secret of Gestetner's new model is synchronised self-inking—an ingenious new mechanism that delivers the precise amount of ink needed as each copy-sheet passes through the machine.

You have only to see the 260 Automatic in action with its many new features to realise that once again Gestetner have set new standards in duplicating efficiency.

GESTETNER LIMITED, HEAD OFFICE, 25 ALDWYCH HOUSE, LONDON, W.C.2. Tel. HOLborn 8700

JULY, 1953

the NEW

Gestetner 260

automatic
with synchronised self-inking

'CROWNING ACHIEVEMENT' an outline of this new Gestetner has just been published. We shall be glad to send your copy on application to 25 Aldwych House.



It's Natural...

TO PUT IT ON PAPER



THIS IS A DICTOGRAM
(A magnetised sheet of foolscap paper used as the recording medium)

Natural and so much more efficient. Ordinary dictating machines use wire, tape, discs or belts. DICTOREL is different. DICTOREL actually uses sheets of ordinary commercial size paper called Dictograms, specially magnetised to give 12 minutes of the clearest speech you have ever heard. In every way the DICTOREL is the world's most advanced dictating machine and because of this it is also the simplest of all to use. Dictograms slip on to the DICTOREL as easily as paper in a typewriter. They can be used time after time, folded and posted, written on if you like, just like an ordinary letter.

Does DICTOREL sound like the dictating machine you have been waiting for? Do not wait any longer. Phone or write to-day for a demonstration in your own office.

dictorel REGD. TRADE MARK

The **RELIABLE MAGNETIC DICTATING UNIT**

Assembled, Marketed and Maintained by

The Trevor-Johnstone Company Limited

Head Office : 14 BERKELEY ST., PICCADILLY, LONDON, W.1. Grosvenor 3871 (5 lines)

Technical Development and Service Depts : 169/174 Sloane St., Knightsbridge, London, S.W.1. Sloane 6198 & 8470

Branch Offices at : MANCHESTER • LEEDS • BIRMINGHAM • BRISTOL & DUBLIN

AND SALES AND SERVICE CENTRES THROUGHOUT THE COUNTRY

PROSPECT

survey and forecast of business conditions

Budget Boost for Home Market

London, June 19, 1953

THE MONTH'S HIGHLIGHTS AND TRENDS

● Mr. Butler is pleased. He may well be. His Budget has paid off. Overall spending in April dropped seasonally, but was well above last April's figure. Main cause was suspended buying of goods with heavy Purchase Tax. Furniture and bedding sales for instance, were 28 per cent, and hardware, electrical and radio goods 23 per cent. above April, 1952. TV sales reached record levels, but so did radio sales. Hire purchase contracts for new cars jumped from 1,700 in February and March to 2,300 in April. But tax relief was not the only factor. April H.P. sales of second-hand motor-bicycles, for instance, were 232 per cent. higher than in the previous April.

● Sales expansion started well before the Coronation, which merely intensified the trend. May sales figures are not yet out, but retailers all agree that spending was on a large scale.

● Banking figures support this. Active currency circulation in the week to June 3 was £1,544m., an increase of £100m. since January and within £7m. of the record figure of last Christmas. Bank balances, too, are up. Mid-May figure was £43m. higher than mid-April. And bank clearings—both London and provincial—were 7 per cent. up on the month. In short, there's more money about.

● Much of this spending was the once-and-for-all type—Coronation decorations, souvenirs, travel, outings. But a good deal was a steady increase in demand for bread-and-butter consumer goods, a reflection of higher incomes from increased production.

● For recovery in production now seems firmly established. April index of industrial production was 6 per cent. higher than that of April, 1952, and even slightly above that for March, 1951 (Easter month). All the evidence suggests that the trend continues.

● Coal production shot up after the holiday drop of 1m. tons. May iron and steel output broke all records. Cotton yarn production in Whit week was practically twice that in the previous Whit week. Consumption of wool in April was greater than in any month since 1951. Brick and cement production in April increased—though not as fast as demand. And April housing was the best, on a comparative basis, so far this year.

● Indication of all-round improvement in output was the fall of unemployment to the lowest level since 1950. The situation is widespread; complaints of labour shortage are currently being made in Lancashire, Yorkshire, the Midlands, and Clydeside.

continued on following page

THE MONTH'S HIGHLIGHTS AND TRENDS (continued)

● Hardest hit are the engineering industries. In the second half of 1952, workers moved into engineering; in the last six months, 100,000 have moved back. Significant changes within engineering: the aircraft industry has 54,000, the aircraft accessories industry 36,000, the small arms and ordnance factories 16,000 and machine tool firms 18,000 more workers than two years ago. Explosives and firework factories are employing 11,000 more people.

● Trade union protests at Steel Board appointments of union leaders are just sound and fury. They will not affect appointments. But they may deter other union leaders from co-operating with the government in future moves, e.g., road haulage.

● Improved labour situation, following engineers' demand for higher wages, has started a snowball. Claims for increases have come from cotton, clothing, furniture and tobacco workers, dockers and film extras. And miners' demands are gaining strong support in coalfields outside Wales. Union leaders are preaching moderation. But the rank and file are unconvinced. Rising labour costs may be a real headache this Autumn.

● So, too, may raw material costs. Wholesale prices are still falling. But May drop in Board of Trade's basic materials price index was only one-half of one per cent. And even this was due almost entirely to a drop of 7.9 per cent. in the copper index.

● Rising trend is widespread. Wool is firm. Cotton is not expected to drop any further. Jute is £10 a ton dearer. Hides have advanced. Copra and cocoa now cost more than in December. In metals, tin, lead and zinc are all firmer. And the European High Authority has asked Britain to raise steel prices to domestic consumers.

● Effect is already marked in shipbuilding. No new orders for major vessels have been placed for months. Now shipowners have started cancelling orders already placed. One reason: B. M. Mavroleon, chairman, London and Overseas Freighters, Ltd., revealed that four tankers bought last year cost 29 per cent. more than original estimates.

● The crawl to convertibility continues. Last month's limited relaxation of inter-European exchanges is working well. But any extension is problematical. The interminable behind-the-scenes talks drag on without apparent result. Major stumbling blocks to date: (1) the attitude of France, which must devalue the franc to promote exports, but lacks a leader, actual or potential, with the courage to do it; (2) the United States, stalling on the "trade not aid" issue. Bright spot: pledge of International Monetary Fund's Ivar Rooth to put the Fund's \$3,200m. reserves behind any reasonable convertibility scheme.

● In the meantime, sterling maintains its strength. Gold and dollar reserves rose in April—though not by much. So did Britain's balance with E.P.U. The improvement is general throughout the sterling area. Overseas assets in India and New Zealand are higher than a year ago. And Australia's reserves have shot up from a low of £A280m. to £450m.—and are still rising. Weak points: Ceylon and Pakistan.

SALIENT FIGURES OF THE MONTH

Production continues to rise. The March index (8) was again equal to that of the corresponding month in 1952, though the manufacturing industries sub-index was again one point lower.

Labour figures for specific industries show continuing rises compared with 1952, though the holidays brought the usual seasonal drop. Coal (9), cotton yarn (13), worsted yarn (15), passenger cars (17), and commercial vehicles (18), all recovered, and output of steel ingots and castings (12) and rayon (14) are running at record levels.

Unemployment (7) in April reached the lowest figure since 1951.

Gold and dollar reserves (30) improved in April, but the rate of increase seems to be slackening.

Wholesale prices (33) continue to fall, but subsequent changes suggest that the rate of decline is becoming slower.

Retail sales (25) declined seasonally in April, but were still above 1952 figures. Sales of hardware, radio and electrical goods were 23 per cent. above April, 1952, levels.

BUSINESS INDICES

		Latest Month	Increase (+) or Decrease (—) on a Month Ago	Increase (+) or Decrease (—) on a Year Ago
1. Production ...	1948=100	* 114.3	+ 0.5	+ 3.5
2. Purchasing Power ...	(do.)	* 100.1	+ 2.2	+ 0.2

MANPOWER

3. Total manufacturing industries	thousands	* 8,686	— 8	(n.a.)
4. Textiles ...	(do.)	* 963	+ 3	(n.a.)
5. Distributive trades ...	(do.)	* 2,618	— 4	(n.a.)
6. Coal (on colliery books) ...	(do.)	721	+ 1	+ 7
7. Registered unemployed (G.B.) ...	(do.)	375.8	— 21.2	— 92.1

PRODUCTION

8. Index of prodn.: total, all inds. 1946=100		* 123	+ 2	Same
9. Coal (average weekly output) (thousand tons)		4,365	— 157	+ 209
10. Gas available at gasworks (average weekly output) ... (million therms)		53.7	— 5.0	+ 4.4
11. Electricity generated ... (million kWh)		5,269	— 723	+ 494
12. Steel ingots and castings (average weekly output) ... (thousand tons)		† 351	+ 2	+ 39
13. Cotton yarn ... (million lb.)		14.5	— 0.7	+ 3.6
14. Rayon yarn and staple fibre ... (do.)		* 36.29	+ 3.55	+ 6.55
15. Worsted yarn ... (do.)		17.8	— 1.3	+ 5.6
16. Sulphuric acid ... (thousand tons)		* 162.5	+ 24.2	+ 14.9
17. Passenger cars (average weekly output) (do.)		11.05	+ 1.43	+ 2.24
18. Commercial vehicles (av. wkly. output) (do.)		4.19	+ 0.15	— 0.36
19. Permanent houses completed ... (do.)		23.88	— 5.50	+ 5.94

TRADE

20. Value of imports ... (£m)		293.3	+ 7.6	— 32.3
21. Value of imports, Western Hemisphere (£m)		* 45.6	+ 3.8	— 29.5
22. Value of exports ... (£m)		214.8	+ 1.9	+ 4.8
23. Value of exports, Western Hemisphere (£m)		* 29.4	+ 0.9	+ 1.9
24. Freight train traffic ... (thousand tons)		† 5.47	— 0.44	+ 0.18
25. Retail sale index ... 1947=100		118	— 2	+ 6

FINANCE

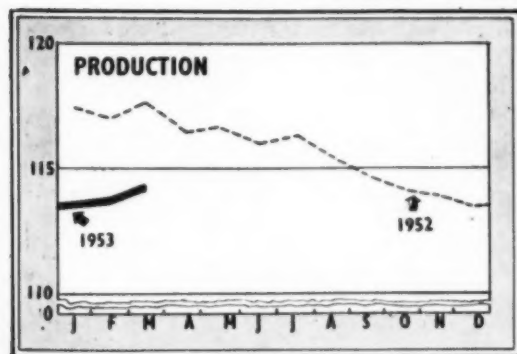
26. Currency in circulation ... (£m)		* 1,462	+ 27	+ 93
27. Deposits, London clearing banks (do.)		6,060	+ 7	+ 66
28. Provincial cheque clearings ... (£,000)		6.85	— 0.14	+ 0.12
29. National savings, total outstanding (£m)		* 6,022	— 5	— 72
30. Gold and dollar reserves (do.)		812	+ 38	+ 218

WAGES AND PRICES

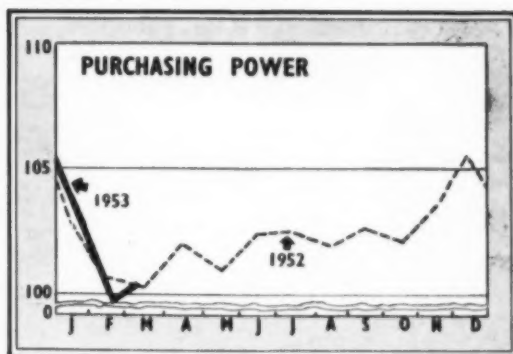
31. Weekly wage rates ... 1947=100		135	Same	+ 7
32. Retail prices ... (do.)		141	+ 1	+ 6
33. Price indices of materials used 1949=100				
Non-food manufacturing industry (do.)		† 148.4	— 0.8	— 13.7
Mechanical engineering ... (do.)		† 143.4	— 2.5	— 8.3
Electrical machinery ... (do.)		† 151.2	— 5.3	— 14.3
Building and civil engineering (do.)		† 130.3	— 0.4	— 4.6
34. Import prices ... 1952=100		90	— 1	— 14
35. Export prices ... (do.)		97	Same	— 4

* March. † May. ‡ Four weeks to †9th April, †1953. (n.a.) Not available.
All other figures refer to April.

"BUSINESS" INDICES (1948 = 100)



A twelve-month moving average of the Official Index of Industrial Production (Total: All Industries).



An unweighted index of currency in circulation with the public, total bank deposits, and total outstanding national savings.



An electrically heated salt bath in the tool room: The Rover Co. Ltd., Birmingham

Tools, dies and gauges

HEAT TREATMENT IN A SALT BATH IS RAPID, it gives uniform results, and it protects the metal from oxidation — considerations particularly important for tools, dies, gauges, and all fine-tolerance work. An electrically heated salt bath will bring your tool room up to date, and will also give you the advantages of cleanliness, convenience, and accurate temperature control.

HOW TO GET MORE INFORMATION

Your Electricity Board will be glad to advise you on how to use electricity to greater advantage — to save time, money and materials.

The new Electricity and Productivity series of books includes one on heating — "Electric Resistance Heating". Copies can be obtained, price 9/- post free, from E.D.A., 2 Savoy Hill, London, W.C.2, or from your Area Electricity Board.

Electricity for **PRODUCTIVITY**

Issued by the British Electrical Development Association

HOME MARKET

Regional Surveys

Midlands

MIDLAND trade has improved steadily since the comparative depression at the beginning of the year. **Unemployment** in April was the lowest for three months and showed the first fall since February, 1952.

The decrease in short time working is due to improvement in the motor, motor cycle accessory, cycle and rubber industries. Redundancies were fewer than in March and were due to reorganization or shortage of orders in the motor vehicle, cycle, cycle accessory, electrical appliances, drop forging, metal box and tube industries. There is still some short-time working in these trades as well as in pottery, nuts and bolts, iron foundry, steel rolling, gas and oil appliances, electrical switchgear, edge tools and furnishing. In the **motor vehicle and accessory** industry, under-employment has been reduced by half and short-time working at Coventry has nearly disappeared.

One firm, the Standard Motor Co., Ltd., is actually working overtime. Production is now at the rate of 700 units a day and this figure is expected to be continued throughout the year. Commercial vehicle and tractor production in Coventry has improved.

In the raw material industries the picture is not so happy. Under-employment in **non-ferrous metals** is increasing, due apparently to the high cost of raw material, particularly brass and copper. The number of workers on short time rose by nearly 600 in the last week of April. Makers of aluminium sheets, however, are working full time. Under-employment in **iron foundries** making castings for the motor, engineering and building trades is fairly substantial.

Boreholes on the edge of the existing Cannock Chase coalfield have shown that the expected extension of **coal** seams is likely to prove greater than was at first believed. A new shaft has already proved reserves of about 200m. tons on the south-east, and four important seams have not been proved on the west.

In Northampton, **footwear** manufacturers are working to

capacity but the general impression is that orders are slackening. Activity in the **carpet** trades shows no signs of decreasing in spite of seasonal fluctuations. Increased **wool** prices have brought brisk buying. Exports, too are expanding.

London and S.E. England

MAJOR step in British Railways construction programme is the widening of the East Coast main line between New Barnet (Herts.) and Potters Bar (Middlesex). Work on the scheme will probably start next spring and take five years to complete; it will cost £1.75m.

Developments at Gatwick airport are hanging fire; a meeting of the London and South Regional Board for Industry was told that the Ministry of Civil Aviation might hold an enquiry to hear objections to plans for extending the airport. Lymington airport, in Kent, may be bought by Silver City Airways, now main user for a car ferry service to Le Touquet and Ostend.

A permanently staffed base at Dover has been established by Marconi International Marine Communication Co., Ltd. to provide **marine radio** maintenance services in the area.

South and South-Western

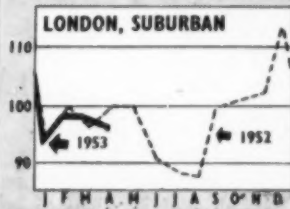
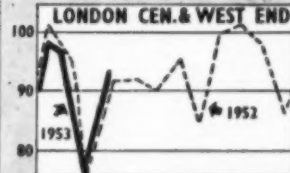
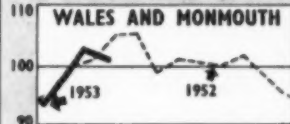
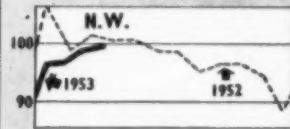
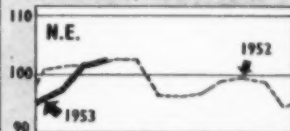
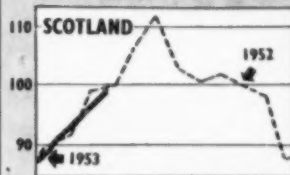
STEADY decline in **unemployment** is reported in Southampton and district thanks to recruitment by the Dock Labour Board and improved activity in shipbuilding and ship repairing. In the South West a big fall in unemployment has followed seasonal engagements for holiday work by

Continued on page ix

What the Chart Shows

Indices in the charts show retail turnover in each region in non-food merchandise as a percentage of national average (=100) for the month. The charts are based on the Board of Trade retail sales indices.

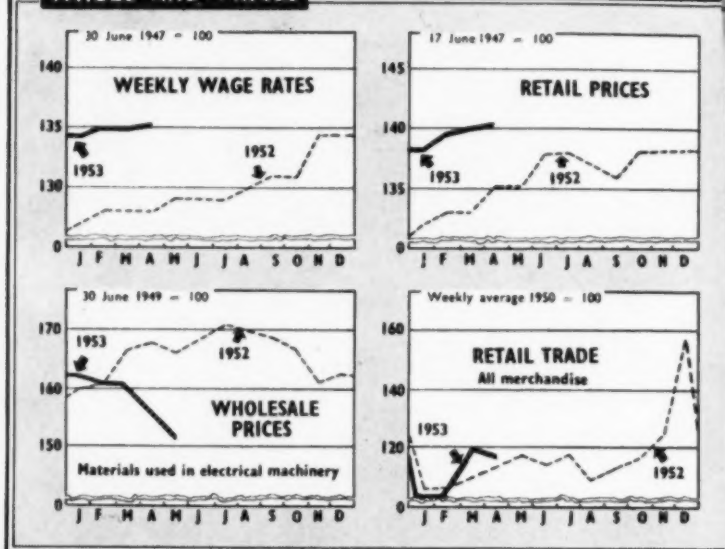
REGIONAL RETAIL TRADE INDICES



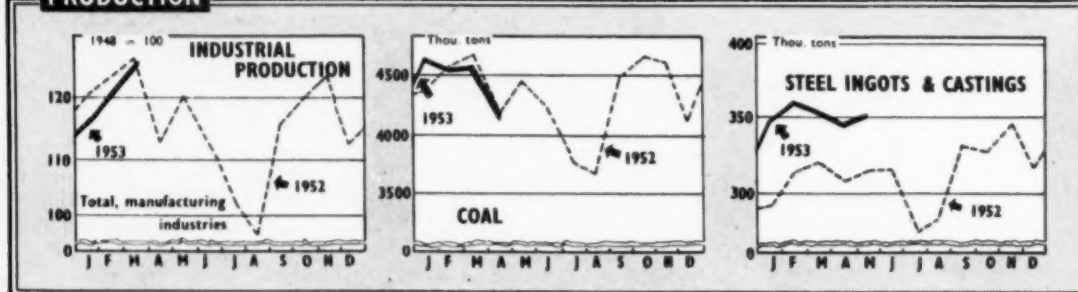
STATE OF THE NATION

From this comprehensive series of charts, covering the main economic factors affecting the state of the nation, the businessman may gain a perspective of the situation governing his operations.

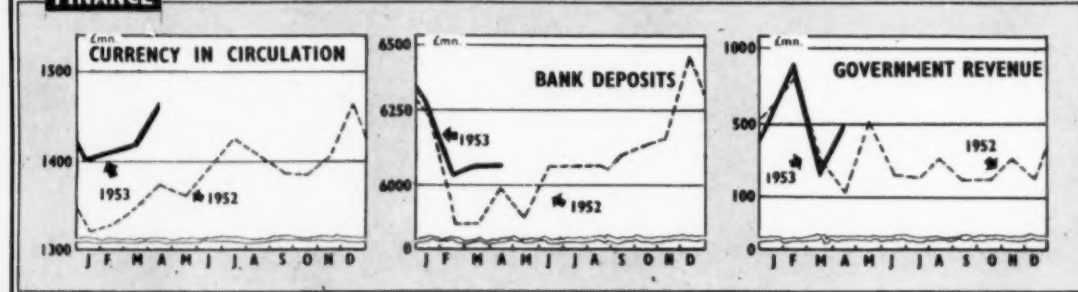
WAGES AND PRICES

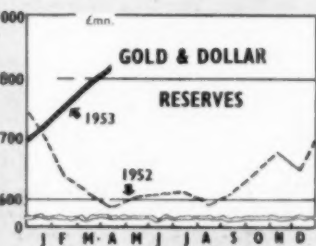
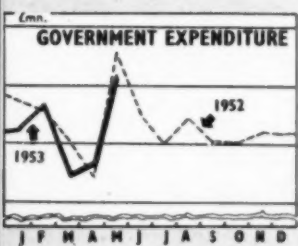
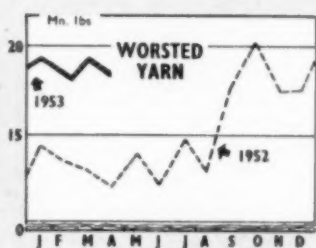
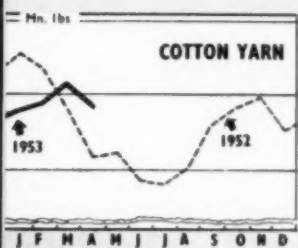
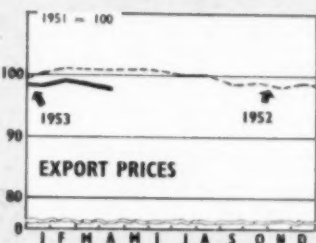
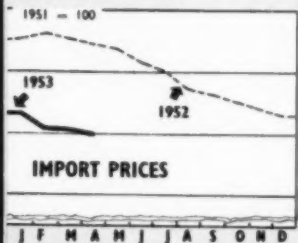
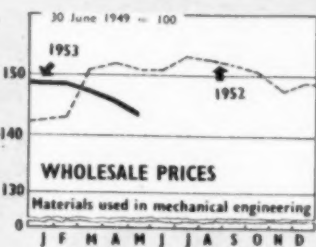
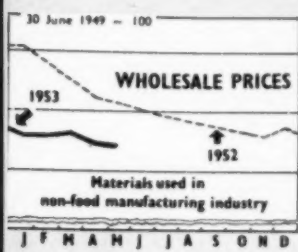


PRODUCTION

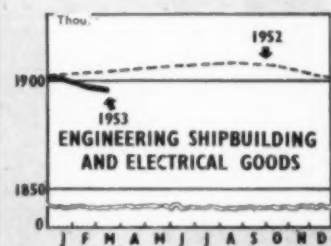
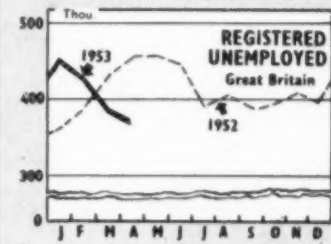
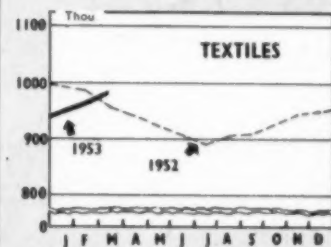
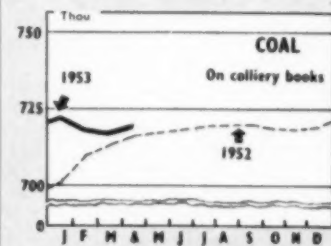
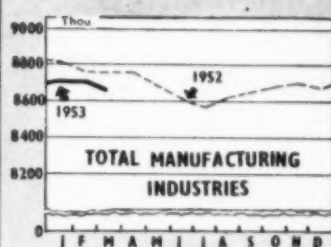


FINANCE





LABOUR



The Duke always gave them a sovereign...



... it was characteristic of the Duke to forget neither an old comrade nor an old obligation.

Most employers today accept a measure of responsibility for the retirement needs of their employees and for the dependants of those who die in service. But where the 'Wellington' system persists, a company is paying the cost of a pension scheme without reaping the considerable advantages which a properly established scheme creates.

Allowances to old employees or to widows and children on an *ex gratia* basis are usually met

out of reserves or current profits. This is not an economic proposition; worse, it is haphazard and fails to provide the vital element of incentive.

A funded retirement plan that takes care of employees at all levels is an investment. But such a plan must be designed to fit and it must be installed and administered by experts.

The Noble Lowndes Pension Service has unparalleled experience in modern pension planning ... Your enquiries will be dealt with confidentially and without obligation.

The Noble Lowndes Pension Service

38 LOWNDES STREET · LONDON, S.W.1 · TELEPHONE SLOANE 3465 (10 LINES)
3 NEWTON PLACE, GLASGOW, C.3 · 25 CROSS STREET, MANCHESTER, 2 · 9 TITHEBARN STREET, LIVERPOOL, 2
12 EASY ROW, BIRMINGHAM, 1 · 7 SOUTH PARADE, LEEDS, 1 · 21 COLLINGWOOD STREET, NEWCASTLE-ON-TYNE, 1
39 KILDARE STREET, DUBLIN

HOME MARKET REGIONAL SURVEYS (cont. from page v)

hotels and cafes. Complaints are being made, however, that the Coronation will mean a heavy loss to the resorts.

The modernization programme of the Imperial Smelting Corporation, Ltd. was delayed early in 1952 due to difficulties in obtaining construction materials but the pyrites-burning sulphuric acid plant of the Swansea Vale smelter was substantially completed at the end of the year and similar equipment at Avonmouth sufficiently advanced for starting this spring. This was reported by J. R. Gobett, chairman, at the annual meeting.

New air service from Exeter to Jersey has been inaugurated by Jersey Airlines with the first De Havilland Heron to be delivered to any company in Britain.

Yorkshire

PRODUCTION in the wool textile industry is still hampered by labour shortage. During March, 1,070 workers were added and more came in during April, but the industry still has room for many more. Vacancies now total 4,233. Shortage of labour is dispersing the industry. A Bradford light clothing firm is opening a new factory in Bridlington and another is going to Harrogate.

The Bradford Dyers' Association, Ltd., and the Bleachers' Association, Ltd., are to exploit jointly new methods of producing decorative effects on textiles.

A £3.3m. scheme to be completed by 1957 is expected to increase output at the Denaby and Cadeby collieries by 250,000 tons a year.

Output of steel ingots and castings in Sheffield is running about 4,000 to 5,000 tons a week higher than last year and short time working has decreased. Owing to improving trade, Briggs Motor Bodies, Ltd., of Doncaster, have reinstated several hundred workers discharged some months ago and are advertising for skilled fitters.

Eastern

THE Eastern Electricity Board is to spend £650,000 on rural development during the present financial year — £250,000 more than last year — but electricity charges are to be increased. Domestic tariffs are to go up by 3d. per week. Consumers on the industrial, commercial and home

block tariff will not pay more and small users will pay less but consumers on the industrial and commercial maximum demand tariff will automatically pay for increases in coal costs. These increases, and the way in which they were announced, brought protests from Associated Portland Cement Manufacturers, Ltd., and Enfield Rolling Mills, Ltd.

Ransomes, Sims and Jefferies, Ltd., are to raise £750,000 for expansion. New capital will cover running costs of the new Ipswich factory manufacturing diesel engines for naval craft and the production elsewhere of a new inexpensive combine harvester under a long term agreement with Bolinder-Munktel, of Stockholm. About £400,000 will be spent on additional plant but no extra workers will be required.

Ransomes and Rapier, Ltd., report orders on hand for two years' output of large and medium range machines, but some falling off in the light machinery section. Material position in the works is better than at any time since 1939.

Shortage of labour is restricting output at B.X. Plastics, Ltd. at Brantham.

The new £2½m. chemical works at Stallingborough Marsh, near Grimsby, of National Titanium Pigments, Ltd. is due to start production this month, but future production schedules may be affected by a shortage of water. Negotiations for increased supplies are continuing.

North-Western

PRODUCTION of and trade in cotton goods continues to show steady and accelerating improvement. The amount of buying interest has recently been a pleasant surprise for producers. Both home and export markets have been reacting favourably and the expected post-coronation slump now seems unlikely.

Rayon output is also booming; average monthly output in the first four months was 35m.lb., compared with an average monthly rate of 32m.lb. in 1951, the record year.

Coal production in the North-West coalfield is also increasing and is running about 20,000 tons a week more than in the corresponding period last year. Collieries in the Burnley and Wigan areas produced record weekly figures in May.

Engineering works are busy.

Diesel engine producers in and around Manchester are working overtime and exports are expanding. A new factory for the manufacture of cathode ray tubes is to be opened at Simonstone in the new North-East Lancashire development area by Mullard, Ltd. The company's factory at Blackburn nearby will also be expanded.

The Crewe north locomotive power depot of British Railways is to be modernized at a cost of about £1m. New round-houses will provide space for 58 locomotives.

The Liverpool group of the National Dock Labour Board has cancelled its temporary release scheme owing to the improved shipping position. There is now a shortage of dockers and men have been brought in from Preston, Warrington and Bronbrough.

Local productivity committees have been set up at Manchester and Carlisle.

Northern

LARGE-SCALE expansion of coal production was prophesied by James Bowman, Northern (N. & C) Division, National Coal Board, after a visit by the Minister of Fuel and Power to the area. Some £6m. has been spent in No. 3 area (North Northumberland) and a further £9m. is to be spent. As a result, in five years' time the area's production will rise from 4m. to 6m. tons a year. A large-scale expansion plan for Ashington colliery is contemplated. This may start in eight or nine years' time. If it matures, it will equal the Lynmouth £3.5m. development scheme.

Four new drift mines are to be started in the No. 4 area (South West Durham) with an aggregate output of 6,500 tons a week. Open cast mining has also been started at Iveston.

Development and expansion is being carried out at the West Hartlepool works of the South Durham Iron and Steel Co., Ltd. Initial improvements will bring ingot capacity to 500,000 tons a year — twice the pre-war figure. Further work to be completed in 2½ years' time will bring output of steel plates up to 350,000 tons per annum.

Orders are reported from the Admiralty for two fleet auxiliaries with Wear shipbuilders.

Work has begun on a third factory at Sunderland for the Bristol Aeroplane Co., Ltd. The new factory, due to be opened next

How Much Do You Pay Your Travellers?

FIGURES on net incomes (including commission but after expenses and before tax) of commercial travellers have been published by the United Commercial Travellers' Association of Great Britain and Ireland. These are based on a questionnaire sent to 30,000 members and filled in by 8,548.

Details of average income and spread of incomes in different industrial groups are given in the adjoining table. The percentages have been recalculated by PROSPECT from those given by the Association. Our figures show the percentage of each main group (wholesaler and manufacturer) receiving the given salary level. The Association's figures show percentages of all replies, irrespective of group.

HOME MARKET REGIONAL SURVEYS — continued

June, will increase floor space to 180,000 sq. ft. and add 300 to 400 workers.

Vickers Armstrong, Ltd. have put back the starting for their 100-acre tractor factory site at Longbenton.

British Railways are to build a new £1m. depot at Thornaby. Work on the project is to start at once. It will employ 1,000 men.

Wales

COAL output and sales are improving. Weekly output is just under the half-million ton mark. Shipments from Welsh ports are running some 25,000 tons higher than at the same time last year, and will continue to rise as deliveries to Argentina under last year's trade agreement increase. Contract is for 800,000 tons, worth about £4.5m. The South-Western Division of the National Coal Board was the only one in the country to improve its position last year; the annual loss was cut from £3,534,963 to £3,044,690.

Steel production is being maintained at a high figure, and a new mill at the Llanelly Steel Co. (1907), Ltd. has started production. It will produce billets, slabs and bars, so that the works will no longer be wholly dependent on demands of the tinplate industry. Demand for tinplate has not improved, and the Briton Ferry Steel Co., Ltd. have announced the closing of two more works, at Briton Ferry and Morriston.

Trade	No.	£300- %	£400- %	£500- %	£600- %	£700- %	£851- %	£1000- %	£1200- %	Average £
MANUFACTURERS										
Agriculture, etc. ...	155	5.1	21.3	17.0	14.8	12.6	8.4	5.8	9.6	720
Biscuits ...	200	1.5	18.0	45.0	18.0	10.5	3.5	3.0	0.5	624
Brewers and wine merchants ...	124	5.7	15.3	20.8	20.0	13.7	4.0	8.8	3.2	726
Builders' merchants ...	412	2.0	9.6	14.8	20.6	21.8	9.1	11.4	8.0	780
Catering ...	18	—	50.0	22.2	11.1	11.1	5.5	—	—	544
Chemists, etc. ...	563	3.4	11.6	20.5	25.2	20.2	8.1	4.6	2.9	685
Clothing, men's and boys' hats ...	281	2.1	4.7	9.5	7.5	17.4	17.1	15.5	21.9	1,014
Confectioners ...	251	4.8	15.5	23.5	19.9	15.9	8.8	4.0	5.2	685
Drapery, etc. ...	235	1.7	5.2	6.8	9.4	21.2	12.0	12.7	27.0	1,002
Electrical, radio, etc. ...	335	2.1	10.1	23.2	21.1	20.5	—	9.8	4.7	716
Engineering ...	375	3.8	8.5	14.3	16.0	19.4	8.5	13.6	14.6	851
Fancy goods, etc. ...	31	—	9.6	19.3	22.5	6.5	9.6	9.6	19.4	843
Flour milling and bakery ...	184	9.2	19.6	25.5	18.9	15.7	2.7	4.9	3.2	629
Footwear ...	89	2.2	13.4	11.2	8.9	15.8	13.5	16.8	17.8	904
Furniture ...	128	3.8	5.5	10.9	14.8	21.8	11.7	10.9	19.5	894
Glass and china ...	27	—	7.5	11.1	14.8	18.5	14.8	11.1	18.5	856
Grocery and pro- visions ...	812	3.6	13.9	32.5	23.0	13.1	4.6	3.4	3.7	655
Hardware ...	244	5.7	12.7	19.7	16.8	18.8	9.1	7.0	7.0	722
Industrial commodi- ties ...	58	3.4	8.5	20.7	12.0	27.5	12.0	5.1	8.5	755
Jewellery ...	27	—	3.7	7.3	22.0	40.0	—	18.3	7.3	846
Leather goods ...	38	—	7.9	10.3	21.0	23.6	15.8	7.9	10.5	812
Medical, dental and optical ...	53	3.7	3.7	20.6	16.9	28.0	5.6	11.3	9.4	771
Motor trade ...	61	11.4	13.0	9.7	14.8	23.0	4.9	8.2	11.5	764
Motor vehicles ...	6	16.7	33.4	16.7	16.7	—	—	16.7	—	596
Office furniture ...	124	4.0	8.8	11.3	12.1	25.0	9.6	8.0	9.6	803
Petrol and oil ...	91	3.4	9.8	14.3	24.1	20.1	12.0	8.8	3.4	722
Printing and pub- lishing ...	285	3.9	7.7	12.9	16.5	20.7	8.4	13.5	11.9	821
Rubber ...	98	2.1	9.2	22.5	26.5	24.4	7.1	3.1	5.1	710
Shop fittings ...	17	5.8	11.7	5.8	29.3	23.4	5.8	5.8	11.7	765
Soap ...	176	2.3	20.5	21.0	18.2	30.2	4.0	0.5	1.7	645
Stationery ...	156	5.2	13.6	16.1	12.8	26.9	8.9	7.0	5.7	723
Tobacco ...	83	5.9	15.6	14.4	18.0	21.7	12.0	10.8	1.2	697
Toys, cycles, etc. ...	63	—	11.3	14.3	11.1	28.5	8.0	14.3	8.0	801
Miscellaneous ...	835	3.9	10.4	17.9	18.4	15.6	9.8	9.7	12.3	707
Total	6,535	3.8	11.0	18.9	18.2	18.6	8.6	8.6	8.9	740

WHOLESALE										
Trade	No.	£300- %	£400- %	£500- %	£600- %	£700- %	£851- %	£1000- %	£1200- %	Average £
Agriculture, etc. ...	37	10.9	16.1	19.2	24.4	13.5	2.6	2.6	5.2	629
Biscuits ...	Nil	—	—	—	—	—	—	—	—	—
Brewers and wine merchants ...	12	25.0	25.0	—	—	25.0	8.0	—	8.0	613
Builders' merchants ...	128	8.0	22.7	25.2	14.8	15.6	3.0	3.0	5.5	640
Catering ...	4	—	75.0	—	25.0	—	—	—	—	488
Chemists, etc. ...	57	8.7	26.0	28.2	17.4	8.7	2.2	2.2	3.3	586
Clothing, men's and boys' hats ...	83	11.8	9.6	8.3	8.3	11.0	11.8	11.0	24.0	913
Confectioners ...	22	18.5	32.0	18.5	13.6	8.6	8.6	—	—	536
Drapery, etc. ...	319	5.4	12.2	13.2	11.6	20.8	9.0	10.6	14.4	822
Electrical, radio, etc. ...	75	7.8	15.3	21.4	17.3	23.9	5.4	4.1	1.2	634
Engineering ...	81	8.4	15.3	28.0	8.4	12.3	8.4	12.3	3.0	674
Fancy goods, etc. ...	13	7.6	30.3	30.3	—	—	—	15.0	7.6	698
Flour milling and bakery ...	14	14.0	21.0	14.0	14.0	28.0	8.5	—	—	607
Footwear ...	54	3.7	14.8	18.5	11.1	20.3	3.7	7.4	14.8	776
Furniture ...	22	13.6	13.6	22.4	22.4	18.4	—	4.7	4.7	650
Glass and china ...	5	—	20.0	60.0	20.0	—	—	—	—	535
Grocery and pro- visions ...	288	19.1	35.5	18.7	8.8	7.4	1.9	2.3	0.4	526
Hardware ...	97	9.1	17.5	33.0	14.4	17.5	3.3	—	4.2	616
Industrial commodi- ties ...	11	—	18.2	18.2	27.0	8.8	8.8	—	18.2	730
Jewellery ...	12	—	16.6	8.3	16.6	41.7	—	8.3	8.3	796
Leather goods ...	12	16.7	25.0	25.0	8.3	8.3	8.3	—	—	594
Medical, dental and optical ...	9	—	—	33.3	11.1	44.4	—	—	11.1	733
Motor trade ...	58	11.1	32.8	18.9	15.6	15.6	1.6	—	3.5	600
Motor vehicles ...	7	—	—	—	28.6	42.9	—	28.6	—	832
Office furniture ...	22	4.5	14.9	9.1	4.5	17.9	14.9	9.1	22.4	919
Petrol and oil ...	22	9.1	19.9	22.6	—	17.9	4.5	9.1	4.5	665
Printing and pub- lishing ...	74	12.1	10.7	15.0	18.9	18.9	5.8	6.8	9.2	720
Rubber ...	15	20.0	26.7	26.7	—	20.0	6.7	—	—	548
Shop fittings ...	8	16.7	16.7	33.3	—	16.7	—	—	—	545
Soap ...	8	12.5	—	12.5	25.0	12.5	12.5	12.5	12.5	769
Stationery ...	68	11.8	19.0	23.3	10.9	10.9	3.0	3.0	11.8	680
Tobacco ...	32	18.7	31.2	18.7	18.7	6.1	—	6.1	—	539
Toys, cycles, etc. ...	32	3.3	6.2	12.4	37.3	28.0	—	3.3	3.3	682
Miscellaneous ...	314	9.5	17.9	19.1	11.7	14.3	6.2	9.1	10.2	645
Total	2,013	10.6	19.6	20.0	13.2	14.9	5.5	5.5	7.6	665

EXPORT MARKET SURVEY

MAY exports dropped slightly to £211.7m., against £214.8m. in April. And increased imports expanded the gap to alarming dimensions. Holiday effects, however, befog comparisons. In fact, average daily exports during the two months were slightly higher than in the first quarter or in the last quarter of 1952.

Exports to **North America** dropped slightly from the record April level, but were still well above 1952 levels.

INTERNATIONAL Chamber of Commerce Congress in Vienna in May was not a happy affair. Happiest comment was that of Eugene Varga, Soviet economist, in *Pravda*. U.S. delegates were optimistic on future prospects for international trade. Most others were not. And the question of East-West trade was carefully avoided. Only concrete result: a crop of highly technical resolutions on trivialities.

Main bogey at Vienna was the prospect of an American slump. The official U.S. delegates discounted it; other Americans, however, are as worried as the rest of us. Currently, the boom is still on. Production, employment, incomes and spending are all at record heights. But there are some signs of writing on the wall. Noteworthy:

- signs of saturation in textiles, refrigerators, lorries, automobiles, tractors and farm machinery;
- rapid growth of credit instalment and mortgages;
- continued fall of farm incomes when non-farm incomes continue to rise;
- diminishing arrears of housing demand.

And a *Journal of Commerce* survey showed that three out of four security analysts expect industrial production to drop by at least 12 per cent. by the end of 1954.

EXPORT incentive schemes are under fire. International Monetary Fund members are putting pressure on individual countries to suppress dollar-retention schemes. A joint British-German effort is being made through the Organization for European Economic Co-operation to outlaw all export incentives. And the Federa-

tion of British Industries is airing the subject through the Council of European Industrial Federations.

Main difficulty: convincing the Dutch. Germany has reportedly agreed to drop her own schemes if the Dutch and French will do likewise. But in matters of commerce...

IN the meantime, President Eisenhower has had his way. America's Reciprocal Trade Act has been re-enacted for a year and the Simpson Bill killed. And prospects for a rapid simplification of customs look rosier than they did. But expect no major easing of tariffs for some months—if then.

TWO points on selling to America, made by Charles R. Sligh, president, National Association of Manufacturers in America, speaking at Edinburgh:

Intensify merchandising and selling.

Be different. People in America buy British cars and woollens because they are different. Outward design is the thing that catches the American eye and the American sales.

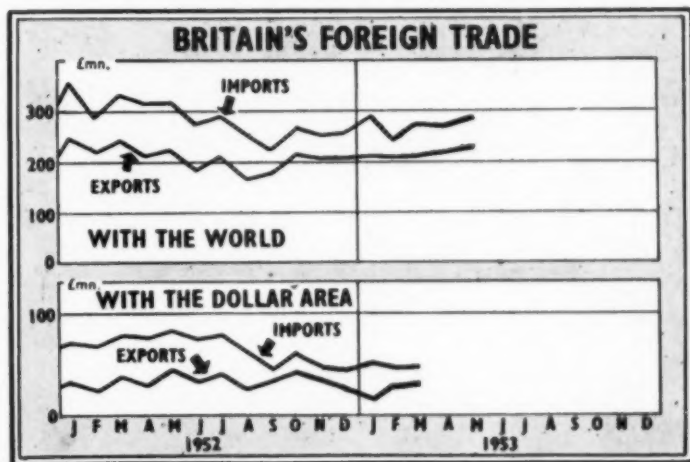
PROSPECTS in Canada are more cheerful. Douglas Abbott, Minister of Finance, has prophesied a high level of consumer spending throughout 1953.

Over half all Canadian homes are still without refrigerators or gas or electric stoves—and owners have the money to buy them. Canadian businessmen agree. Surveys show that independent stores intend to spend \$124m. in expansion this year, against \$76m. last, and department stores \$25m., or three times as much as in 1952.

One cloud: nearly half all retail business is on a credit basis.

AUSTRALIAN prospects are encouraging. The wool selling season yielded the second highest income on record. Stocks of consumer goods are depleted. Import restrictions are gradually being relaxed, and buying is being resumed on an increasing scale. But high-cost Australian industries are pressing strongly for retention of restrictions or replacement by substantial protective tariffs. **New Zealand**, too, has increased allocations of foreign currency to importers.

NEW five-year plan in **Jordan** offers prospects. Main items: big hydro-electric plants, agrarian developments, calling for terracing, wells, pumps and agricultural implements. Road construction and the development of Aqaba as a major port will also help. Programme is controlled by the Development Board of the Hashemite Kingdom of Jordan.



'ENGLISH ELECTRIC'

Electric arc welding has brought about great changes in British shipbuilding. More and more ships are being built by welding together large sections on the slipways. Much of the arc welding and other equipment used in Britain's shipyards is manufactured by 'ENGLISH ELECTRIC'.



bringing you

Today, British shipbuilders face more foreign competition than ever before. 'ENGLISH ELECTRIC' is providing our shipyards with the most modern equipment to enable ships to be built at competitive prices, thus helping Britain to supply the world with its finest ships. In this, as in so many other ways, 'ENGLISH ELECTRIC' contributes to the better living of millions.



better living

The ENGLISH ELECTRIC Company Limited, Queens House, Kingsway, London, W.C.2



**"And this is our
new machine shop"**

It would not make sense, would it?

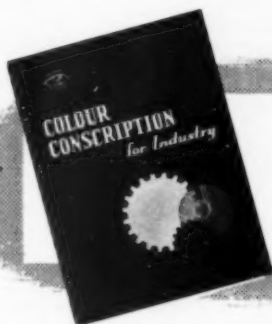
But is it more logical to *equip your works with up-to-date machinery; to install the latest labour saving devices; to spend substantial sums on welfare—and to then restrict the workers' capacity to make the best of such facilities.*

Yet, precisely this situation occurs in thousands of factories everywhere.

And unless you have already adopted the principles outlined in "Colour Conscription for Industry", it is happening in your works now!

It occurs in every factory, in every office where colour is used to satisfy an individual preference; or because it has always been done that way!

"Colour Conscription" tells you in a straightforward, commonsense way, how to employ colour to the advantage of both workers and your company. How colour stimulates human effort by reducing fatigue; its beneficial influence upon production and its effect upon absenteeism.



PRODUCTION **UP** 10%
ABSENTEEISM **DOWN** 50% .

Such is the record of a well-known foundry after applying the principles described in "Colour Conscription."



BRITISH PAINTS LIMITED

PORTLAND ROAD, NEWCASTLE UPON TYNE 2.



Here is something new in Industrial Chairs . . . with many unique features not usually found in seats of this type.

Only the Victrolec Chair has these advantages . . .

- Completely adjustable—for seat, back-rest, and foot-rest positions. All controlled independently.
- De-luxe upholstered comfort.
- A spacious locker for handbags and shoes etc.
- Folds flat, quickly and very easily carried.
- Chromium finish and upholstery in a wide range of colours

Write for fully descriptive leaflet.

or Just right !

VICTROLEC INDUSTRIAL CHAIR

261-3 VICTORIA ST., ASTON, BIRMINGHAM, 16



your floor cleaning problems...

. . . the solution to any problem of floor cleaning—irrespective of its nature or where it exists—lies in the selection and correct operation of the machine for the job.

To make it still simpler from the user's point of view, the Columbus-Dixon Technical Advisory Service was created. Offered without obligation, it is staffed by a team of experts whose knowledge of floor cleaning problems is based on the widest experience backed by the most comprehensive range of equipment.

This service is at your disposal. Whether your concern is with industry, the school or hospital and whatever your floor cleaning problem . . .

consult

Wembley 6000
**TECHNICAL ADVISORY
SERVICE**

COLUMBUS-DIXON LTD.,
Capitol Works, Empire Way,
Wembley, Middlesex.



21 years' experience and 21 different machines guarantee the efficiency and service backing every Columbus-Dixon product. The answer to your problem lies in one of this comprehensive range of machines. We shall be happy to send you details.

**THE COLUMBUS-DIXON
ORGANIZATION . . .**

the people with experience

Made to "MEASURE"!



"Firth for fine Worsteds"—a well-known slogan for materials more popular today than ever before. With a reputation for fine merchandise and service to the tailoring trade, it was soon apparent that new and speedier departmental systems had to be introduced to keep pace with a rapidly expanding business. For example: the Kalamazoo Copy-Writer system was chosen as the answer to the Sales Ledger Department's accounting problems. It soon proved a wise choice, for in addition to time-saving it also gave them their day-to-day "trading position." No wonder Firth's of Huddersfield were satisfied in finding a system that kept pace so easily with their growing business.

You may be well suited at the moment, but remember always that Kalamazoo can be readily tailored to fit any business.

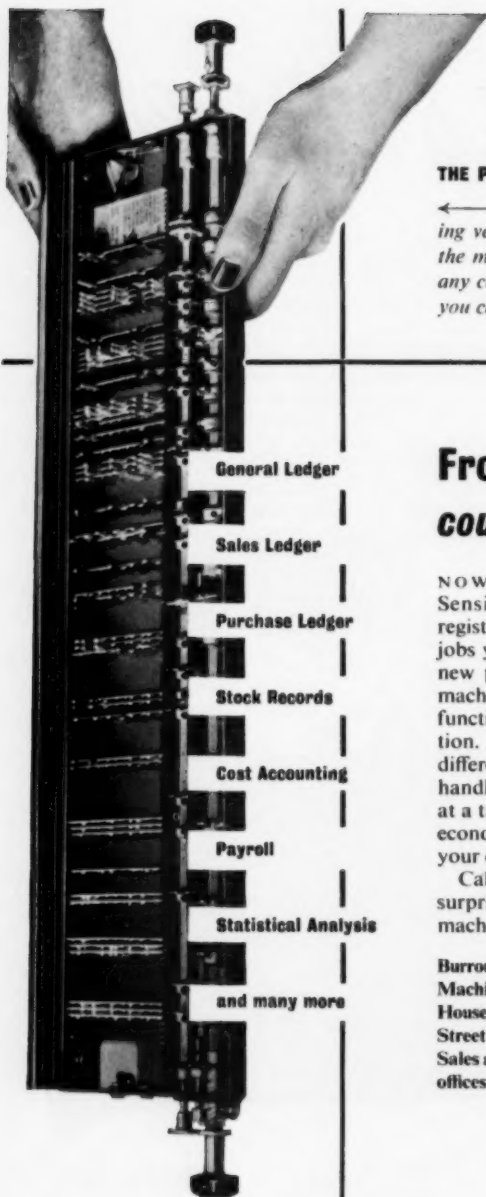


Just one of the ways in which

Kalamazoo

serves Industry, Commerce and Public Administration

KALAMAZOO LTD · NORTHFIELD, BIRMINGHAM 31



THE PURPOSE AND RESULT OF SENSIMATIC CONTROL

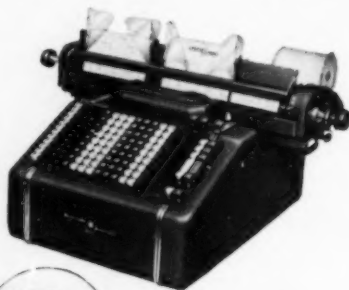
← Here's the secret of the Sensimatic's astonishing versatility. Each panel (or sense-plate) like this guides the machine through any four different accounting jobs in any combination. There is no limit to the number of panels you can use.

From one accounting machine— countless applications

NOW THERE ARE FIVE VERSIONS of the Burroughs Sensimatic Accounting Machine, giving you the registers or combinations of registers you need for the jobs you have on hand. All are based on the completely new principle of Sensimatic Control, which directs the machine automatically through every mathematical function and carriage movement during a posting operation. Just as there is no practical limit to the number of different accounting applications the Sensimatic will handle—switching instantaneously from one to another at a turn of the selector knob—so there is no limit to the economies in time and labour which its use will effect in your office.

Call Burroughs about the Sensimatic today. You'll be surprised at the low cost of this multi-purpose accounting machine.

Burroughs Adding
Machine Limited, Avon
House, 356-366 Oxford
Street, London, W.1.
Sales and Service
offices in principal cities.



Burroughs  **Sensimatic**

The MARCH of BUSINESS

WHAT BRITAIN WASTES

B RITAIN is sparsely provided with native raw materials. So, at least, the economists tell us. One might expect that those available would be fully used. Yet every year more than five million tons of potentially valuable organic matter are dumped, destroyed, allowed to rot or run to waste in this country. And though more than 300 primary and secondary products of biological origin arise in bulk in Great Britain, detailed chemical analyses appear to be available for less than 5 per cent. of them. We know less, for instance about the composition of grass than we do about seaweed.

These and many other facts are brought to light in a report, *A Survey of Agricultural, Forestry and Fishery Products in the United Kingdom and their Utilization* (H.M.S.O., 7s. 6d.), by Dr. A. B. Stewart, of the Macaulay Institute for Soil Research and Dr. F. N. Woodward, of the Institute of Seaweed Research.

Main purpose of the report is to stress the need for large-scale research on better methods of using by-products already partially used on the farms, and on any methods of using materials now completely wasted. In the U.S.A., there are four regional laboratories, under the Bureau of Agricultural and Industrial Chemistry, to develop "food and non-food" uses for agricultural commodities and wastes by the application of chemical and allied sciences. In Canada, three similar laboratories are projected by the National Research Council. But Britain has no comparable laboratory.

A handful of businessmen, however, have already pioneered development on their own account, notably Alginate Industries, Ltd., whose use of seaweed as raw material was described in the November, 1952, issue of *BUSINESS*. But the field is still wide open to enterprise.

★ ★ ★

COMPETITION for the best design for a rigid or cylindrical box and a carton is announced by the British Paper Box Federation and British Carton Association. There are three classes: for

a pack in production or on order, for new designs (general) and for new designs (students). The competition is open to members of the Federation and Association, their customers and designers. Entries must be submitted before September 19th.

★ ★ ★

TOWARDS ATOMIC POWER

SUCCESSFUL operation of an atomic breeder reactor, reported from the United States, is a development of enormous economic importance. It raises the near prospect of cheap electric power from nuclear energy out of the possible into a certainty. Technically, the development of power from nuclear fission has been on the cards for some years. Economically, the prospect has been poor.

The fact that the normal uranium reactor can utilise only a small fraction of the uranium consumed suggested high running costs in addition to high capital costs. The

breeder reactor consumes all the uranium fed into it, and thus increases the potential power production in the ratio of 140 to 1. And cost per unit produced will drop in proportion. Nuclear power may well be competitive in price with power from coal or water.

It will, of course, not be available tomorrow. But Sir John Hacking, deputy chairman of the British Electricity Authority, suggested to the British Electrical Power Convention at Torquay that it might make a significant contribution to our electrical energy supplies within 15 to 20 years. And, since world reserves of uranium are many times greater than those of coal and oil, that contribution may well be a lasting one.

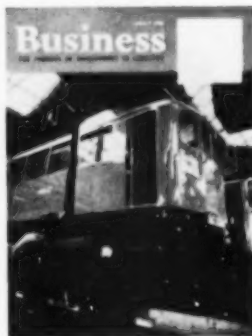
Immense expenditure will be needed, both on research and on capital equipment. Will this be forthcoming? In Britain, the prospect is obscure. Atomic power is firmly in Government hands, and is therefore subject to political considerations. In the United States, the U.S. Atomic Energy Commission is permitting research

Can Japan Compete?

BUSINESSMEN complain of increasing competition in world markets from German and Japanese exporters. Some months ago, *BUSINESS* published an analysis of the German export drive. Now, in an important survey starting on Page 43, a similar analysis and forecast of Japanese competition is made by the Editor of this journal.

FIRST of three articles on controlling maintenance costs appears on page 60. To illustrate this, our cover photograph this month, specially taken for *BUSINESS* by F. Dunscombe Honiball, A.R.P.S., shows maintenance work being carried out at a London Transport Executive depot.

MAIN article in the August issue will be an authoritative survey by an expert on the contribution that house organs can make to efficiency in the factory and the office.



Emidicta

The very LATEST—and the very BEST **DICTATION equipment**



THE MAINS
PORTABLE
EMIDICTA

A six minute demonstration will convince you of the advantages of the Emidicta Office and Portable models which give you an economical round-the-clock Dictation Service in the office, the home and in the field. The complete Emidicta System has the following unique features :

- The only dictation equipment of ALL BRITISH design—sturdy in construction and conforming to the highest standards of British manufacture.
- Simple to understand, easy to operate, compact to accommodate.
- First-class quality of reproduction from the EMIDISCS.
- The simplest possible correction of dictation by merely overspeaking.
- Very quick and very simple magnetic erasing.
- Remote Stop/Start and Repeat Controls provide effortless operation.
- Telephone messages are as easily recorded as dictation.
- Speedy letter output is assured by particularly simple disc change.
- EMIDISCS in practice cost only about 1d. per hundred letters !



**WHEN IN
LONDON
VISIT
OUR NEW
SHOWROOMS
AT
363-367
OXFORD ST.**

E.M.I. SALES & SERVICE LTD.

Emidicta Division, Dept. 4.

Telephone: Mayfair 8597. Grosvenor 7127/8.

teams from private companies to investigate technical and economic problems of power production from atomic energy. Four teams, representing public utility, chemical and industrial companies, have already completed their investigations and issued enthusiastic reports. One industrial group, engaged on a government contract in the field, is going ahead with further research on its own account. They designed a reactor for the purpose and spent their own finances heavily.

★ ★ ★

LATEST use of electronic computers: forecasting fashion changes. The American garment industry is now using computers made by International Business Machines and Remington Rand for this purpose. As individual orders taken by clothing salesmen come in, they are fed into the machine and the outcoming trend data of preferences in colour, style, size and price are sent back to the manufacturer.

★ ★ ★

MEDICINE IN INDUSTRY

MOST large concerns with labour forces numbered in thousands now employ resident medical officers as a matter of course. For this purpose, they naturally choose a doctor who has specialized in "industrial medicine." The businessman operating on a more modest scale, and relying on the part-time services of a general practitioner, may often wonder whether he is missing something.

Dr. R. Prosper Liston, writing in the *British Medical Journal*, gives a reassuring answer. The problems common to industrial medicine—for example, fitness or otherwise of a man for a task, the institution of facilities to secure an environment in which a man can work his best, the resettlement of a worker after injury or illness, and the most advantageous employment of the disabled—are all matters which a general practitioner can attend to if he knows the conditions of work.

But this last proviso is fundamental. And Dr. Liston suggests that factory doors should be thrown wide open and every effort made to encourage the general practitioner to discover the conditions in which his patients are working, the stresses and strains to which they are subject, and the

PEOPLE * PRODUCTS * PLACES

B.O.A.C. Chairman Opens 1953 B.E.E.



SEEING FOR HIMSELF—

Sir Miles Thomas examines a copy of the special Guide to Office Equipment at the BUSINESS stand. Left to right in the photograph are: John Sime, joint managing director, Business Publications, Ltd.; J. A. Cumming, chairman of O.A.B.E.T.A.'s publicity committee and a director of Gestetner, Ltd.; Sir Miles Thomas; and W. J. Arris, president of O.A.B.E.T.A. and managing director of Burroughs Adding Machine, Ltd.

SIR MILES THOMAS—

Chairman of British Overseas Airways Corporation (seen on left) opened the 1953 Business Efficiency Exhibition at Olympia on June 16th. Before the formal opening, Sir Miles made a detailed tour of the stands. His speech stressed the importance of modern office equipment and the post-war expansion of the industry.



"BUSINESS" AT THE B.E.E.—The BUSINESS stand at the exhibition. Over 80 firms exhibited their products on 100 stands covering an area of 170,000 sq. ft. In 1952, British office equipment exports totalled over £14 million and the U.S.A. was the biggest buyer.



Many, many years ago, equipment such as this would have been considered 'modern', but one has only to look around the modern office to note the vast strides that have been made—and yet—there are still typists to-day who are compelled to work to out-of-work ideas. "PRIMUS" Continuous Stationery has replaced the out-of-date unproductive operations previously carried out in the office—interleaving and extracting loose carbon sheets, inserting and aligning separate stationery forms, etc.

"PRIMUS" saves ONE HOUR IN EVERY THREE on invoicing, works orders, goods received notes, purchase orders, and other tasks of a repetitive nature. With the simple attachment, "PRIMUS" forms can be used on any make of typewriter. The smooth feeding of the forms into the machine assures that the typist is engaged ALL the time on productive work.

PRIMUS Continuous Stationery

THE PRIMUS STANDARD REGISTER

For HAND-WRITTEN RECORDS, the Primus Register used in conjunction with Continuous Stationery ensures the same speedy smooth operation, while a copy automatically locked in the machine provides your auditor with a check on each transaction.



CARTIER-DAVIS LTD.

QUEEN ELIZABETH STREET • LONDON S.E.1.

TEL: HOP 0204-5-6.

Branches at: BIRMINGHAM - MANCHESTER - DUBLIN - GLASGOW

hazards and risks, if any, that they face.

"The divorce of the G.P. from his patient is being encouraged in industrial medicine," complains Dr. Liston. The moral for the businessman is that the G.P. can do as much for him as the expert in industrial medicine—providing that he is helped. But he cannot be expected to know what factory work means if he can never visit the factory itself.

★ ★ ★

A FLOOD of information from the Censuses of 1950 is now available for businessmen. First section of the Census of Production, already published, consists of introductory notes (1s.) and Vol. 4 on engineering, shipbuilding and electrical goods (2s.). Further volumes will be published at short intervals. Final report of the Census of Distribution is promised in three successive volumes during this year. Sales managers will find this invaluable.

★ ★ ★

REASONABLE "EXES"

WHAT is a reasonable allowance for a commercial traveller who provides and maintains his own car for the purpose of transacting business for his firm?

The United Commercial Travellers' Association of Great Britain and Ireland have tried to provide an answer. They suggest that a fair standard for an 8 h.p. car is as follows:—

	£	s.	d.
Depreciation	66	0	0
Road Tax	12	10	0
Comprehensive insurance	15	0	0
Repairs (average p.a.)	50	0	0
Tyres	15	0	0
Services and cleaning	15	0	0
Home garaging	20	0	0
Batteries	4	0	0
Sundries	2	10	0

per annum £200 0 0

For a 10 h.p. car, the allowance should be £230 p.a., for a 12 h.p. car £270, and for a 14 h.p. car £320, computed *pro rata*. These are subject to a 15 per cent. reduction to cover the private use of the car.

The actual cost of petrol, oil, incidental parking, ferries, etc., etc., on business journeys should be reimbursed as and when incurred.

JULY, 1953

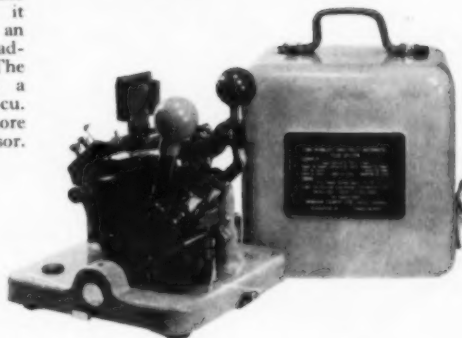
PEOPLE • PRODUCTS • PLACES



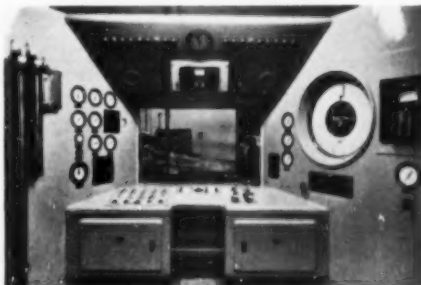
ELECTED PRESIDENT—Newly-elected president of the Institution of Production Engineers is Walter C. Puckey, M.I.Prod.E., F.I.I.A. Widely known in the engineering world, Mr. Puckey has recently retired from the Ministry of Supply where he was Deputy Controller of Supplies (Aircraft Production). Previously he was a director and general works manager of Hoover, Ltd. He is also a director of the British Tabulating Machine Co., Ltd.

COMMERCIAL MINOR

—New product of the British Motor Corporation is this Morris 1-ton van. Embodying many features of the Morris Minor, it is powered by an 800 c.c. overhead-valve engine. The van body has a capacity of 78 cu. ft.—8 cu. ft. more than its predecessor.



OSCAR WINNER—"Fastest and only fully automatic film splicer" is the title claimed for this piece of equipment—the Robot II Mk. V. The machine is capable of completing a join in less than eight seconds. The Robot II is widely exported. It won an award of the American Academy of Motion Picture Arts and Sciences, which is the technical equivalent of an "Oscar".



JET TESTER—

Front view of the control panel of the Heenan and Froude jet test plant installed at the Standard Motor Company's works. Standard's are to make Avon jets as part of a national programme to manufacture engines for civil and military aircraft.

underwood

tools of efficient management to

Speed the World's Business

**now available from our
Brighton factories**



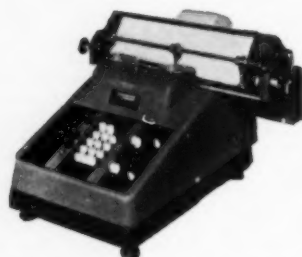
**Underwood Rhythm-Touch de-Luxe
Typewriter**



Underwood Sundstrand Adding Machine



**Underwood Sundstrand Automatic
Portable Accounting Machine**



**Underwood Sundstrand Statistical
Tabulator**



**Underwood Sundstrand Class "E"
Accounting Machine**



**Underwood Sundstrand Class "D"
Accounting Machine**

Underwood Business Machines Ltd

4-12 New Oxford Street, London, W.C.1. Tel: Cha 3131. Factories: Brighton, Sussex
Sales & Service Everywhere



The Truth About

JAPANESE

COMPETITION

British businessmen are complaining of growing Japanese competition in overseas markets. But figures show that Japanese exports are declining. The Japanese claim that world-wide restrictions on imports from Japan are crippling their economic crisis in the side observers foresee an economic crisis in the near future unless exports can be radically increased. This important article surveys the facts behind the problem, and points their lesson for the British businessman.

by PHILIP F. DYER, Editor "BUSINESS"

SCARCELY a week goes by nowadays without some company chairman bewailing the increasing incidence of Japanese competition in world markets. Their complaints are reinforced by those of responsible organizations.

On the other hand, Japanese politicians and industrialists complain equally about the low level of Japanese exports, and of the need to increase them. Nor can these complaints be dismissed as special pleading. They can be sup-

ported by figures. Before the war, Japanese export-import trade amounted to 45.5 per cent. of her national income; in 1952, the comparative figure was only 22.3 per cent.

What, then, is the truth between these conflicting views?

Japan is a small, overcrowded island, with more than 86,000,000 people living in an area one-third larger than the United Kingdom, only 17 per cent. of which is arable land. In 1930, there were 2,774 persons to every square mile of

cultivated land. But population is increasing rapidly; it has grown by more than 14,000,000 since 1945, and the figure is now 4,340. By 1960, population is expected to reach 93,000,000, by 1970 99,000,000, and by 1980 105,000,000.

These millions of extra rice bowls can only be filled by increased imports of food, which can only be paid for by increased exports. Japan possesses few raw materials, so that these exports can only consist of manufactured goods, and must, moreover, be sufficient to pay for the raw materials imported to make them, in addition to the food.

Handicaps

The task of expanding exports on this scale would have been hard enough before the war. The effect of Japan's aggression and defeat has intensified it. Japanese industry suffered severely from allied bombing, and production has been slow to recover from war and post-war disorganization. Thanks largely to American aid, however, the index of industrial activity is now running about 50 per cent. above the 1922-36 average level, but this output increase has still not kept pace with the increase in working population.

The loss of control of Manchuko under the armistice terms and the subsequent loss of the vast



Chinese market meant that Japan had to find other sources of about 18 per cent. of her raw materials.

The net result has been that Japanese foreign trade today is still, overall, well below pre-war figures, but the decline has been concentrated in those areas in which British interest was never very substantial, while Japanese exports to other areas, where Britain is interested, have increased.

Official returns show that imports in 1952 cost Japan £730m., against receipts from exports amounting to £458m., leaving a deficit of £271m. The balance of payments for the year showed a surplus of \$223m., thanks to receipts from the United States for Korean war expenditure, the support of American troops in Japan, and other economic aid, amounting in all to some \$800m. On a visible trade balance, Japan had a deficit of \$450m. with the United States.

After U.S. Aid—?

The Korean war, however, cannot last for ever, and a long-term solution of Japan's balance-of-trade problems will inevitably involve independence from American aid. But this can only be achieved either by import cuts, an increase in exports, or a combination of both. Cuts in imports can only be limited, since the bulk already consist of vital raw materials and food. Restrictions in allocations of currency for "luxury" imports have, however, been worked out and will come

into force in October. But the major effort must come from expanded exports.

Textiles Position

The immediate prospects of an increase in exports are not too favourable. Japan, too, has experienced the disappearance of the buyers' market. Exports in 1952 dropped for the first time since the war, and were some 6 per cent. lower than in 1951.

Most serious fall was in cotton goods — traditionally Japan's major export. Cotton cloth exports amounted to 761 million square yards, valued at 64,888m. yen or 30.5 per cent. less in quantity and 43.5 per cent. less in value than in 1951. Cotton yarn exports were 29.55 million lb., valued at 10,228m. yen, an increase of 5.1 per cent. in quantity, but a decline of 12.9 per cent. in value.

Exports have recovered somewhat since the turn of the year, but are still well below 1951 levels, and it is difficult to see how the 896m. yards which Tokyo newspapers are estimating for 1953 exports are to be achieved. And the figure of 1,100m. yards mentioned at the 1952 international cotton conference at Buxton as a target remains a pipe-dream.

Greater possibilities of expansion—and consequently greater threats to British exporters—are offered by Japan's growing engineering industries. Exports of iron and steel products in 1952 headed the list, with a total value of 94,460m. yen, or 20.6 per cent. of all Japanese exports.

And 1952 was by no means a good year for Japanese engineering; there were considerable unused reserves both of capacity and of labour. In the shipbuilding in-



中
英

STAR EXPORT: Japan's light engineering exports have expanded rapidly. Prominent among them is bicycles.

BUSINESS

dusty, for instance, only 26 of Japan's 100 slipways were in operation in April, and current output is only about one-third the record figure of 668,000 tons produced in 1952-53.

The same is true of other branches of engineering. And, of course, the many engineering concerns now working on American procurement orders could rapidly switch to production for other markets, if those markets were available and the American orders ceased.

Expansion in light engineering products has been rapid. Japanese bicycles and sewing machines are now selling widely. Some 980,000 bicycles were exported last year, with parts sufficient to assemble 1,400,000 more.

Japan is obviously able to produce the goods required for a substantial increase in exports. Why, then, has the comparatively slow expansion since the war been halted? In reporting the disappointing results for 1952, the Japanese Ministry of Finance put forward four excuses:

- (1) World-wide business recession and resultant heightening of import restrictions by the sterling and open-account areas;

- (2) The weak competitive power of Japanese industry on the world market;

- (3) Slackening imports as raw material stocks rose in consequence of the decline in exports; and

- (4) Lack of commercial and navigational treaties between Japan and foreign countries.

Trade Restrictions

There is little doubt that Japanese exports are being limited by import restrictions imposed by potential customers. Most countries, with bitter memories of Japanese dumping in the 'thirties, now limit the entry of Japanese goods or impose heavy tariffs on them.

Japan has taken steps to remove these restrictions by applying for membership of the General Agreement on Trade and Tariffs (G.A.T.T.). Her application was considered for a fortnight in February by an *ad hoc* committee of G.A.T.T., which subsequently sent a report to all governments concerned. This report will be



CONVERSION: This lathe produced armaments during the war. Present output—cycle parts

considered at a special session of G.A.T.T. this autumn, which will finally decide whether, and on what terms, Japan may be admitted.

The desirability of Japan's accession to G.A.T.T. has been hotly debated. It would mean that Japan would automatically receive "most-favoured-nation" terms from all signatories of the agreement, and would be able immediately to negotiate a series of bilateral agreements for the mutual reduction of tariffs. This would certainly lead to an expansion of Japanese exports.

The advantages for other G.A.T.T. signatories are not so clear. And some governments, including the British, are demanding that as a condition of admission Japan should offer safeguards against a recurrence of unfair competition. A communiqué issued by the *ad hoc* committee discusses the form which such safeguards could take—without making any specific proposal.

Bilateral Pacts

General consensus of opinion, however, is that Japan will be admitted to G.A.T.T., if only because it would be better to have her inside, where malpractices could at least be openly discussed, than sulking outside. But a majority of the *ad hoc* committee suggested that her admission should be timed to coincide with a period of expanding world trade, so that the inevitable repercussions would not be so severely felt. And this may well mean an indefinite postponement.

In the meantime, the Japanese government is going ahead with the negotiation of bilateral trading agreements outside the G.A.T.T. framework. In the last few months, trade agreements have been signed with Pakistan and Sweden, and an agreement for the relaxation of import restrictions signed with Britain.

Other agreements may follow. A government mission visited the Middle East in February and March, and had discussions with the governments of Egypt, Syria, Lebanon, Turkey, Iraq and Persia.



Similar drives for new markets are being made by Japanese industrialists. The Japanese Cotton Spinners' Association has informally suggested to the government that a trade mission should be sent to the sterling area to promote exports of Japanese cotton textiles, and earlier in the year textile leaders established a Cotton Goods Export Adjustment Association, designed to expand exports of cotton products by stabilizing prices at international levels.

The Japanese iron and steel industry is considering joint action to combat competition from the Schuman Plan countries, and a railway industries mission has visited Pakistan to discuss the supply of locomotives and railway equipment.

Finally, a top-level trade promotion secretariat has just been set up in Tokyo for urgent study of all practicable methods of increasing Japanese trade with South-East Asia. This body consists of representatives of the government and of private industry, and its proposals go far beyond the normal promotion of exports. They include, for instance, recommendations for a single comprehensive plan for the rationalization of

Japanese key industries, and for price controls, involving a double-price system for goods now quoted at levels higher than ruling international standards.

The "double-price" plan is significant, for it is a tacit admission that a key factor limiting the expansion of Japanese exports is price. Today, Japan is no longer a low-cost country; she is being priced out of the market.

The wholesale price index of the Japanese government was 152 in January, against 100 before the Korean war. There was a 3 to 4 per cent. drop in 1952, but this was due wholly to a 9 per cent. drop in prices of manufactured goods. Prices of raw materials rose 8 per cent., and at the end of the year coal prices were 65 per cent. and electricity charges 70 per cent. above the pre-Korea level. As a result, prices of manufactured goods were, on the average, some 10 per cent. above the international level.

High Prices

High prices affect all Japanese goods. Western Germany, for instance, is quoting from \$3 to \$4 less than the \$125 to \$126 a ton, f.o.b., sought by Japan for shipbuilding plates. Japan's price for rayon yarn in the Indian market averages 53 cents per pound, f.o.b., compared with Italy's 43.3 cents and West Germany's 50 cents. Shipbuilding costs in Japan are from 10 to 15 per cent. higher than ruling international levels for

tankers, and from 20 to 25 per cent. higher for freighters. And the United States has warned the Japanese authorities that prices for many procurement-demand orders are too high and must be reduced if the volume is to be maintained.

There are, of course, valid explanations for the high prices of Japanese goods. Costs have risen rapidly in recent years. High taxation—necessary to support an army of seven million unemployed—plays its part. Increased labour costs, too, play a substantial role. The real wages of textile workers are now 65 per cent. above the 1934-36 level. Nor is there any practical possibility for economies here. The increase has been substantial, but the average Japanese worker is still living on a bare subsistence level. And a post-war trade union movement, formed largely on American initiative, provides a nucleus of opposition to the wage cuts strongly advocated by many Japanese industrialists as the only solution.

At the moment, this movement is still young and lacking in experience. But there is at least an organization in being which will render wage cuts difficult. And Mr. Yoshida's introduction of anti-strike legislation may well help to heal the splits in the movement.

Another important factor in high Japanese costs is the obsolescence of much of Japan's capital equipment. This is due in part to the destruction of capital during the war, but at least in part to the reluctance of Japanese industrialists to plough back profits into their industries.

Nor has foreign capital been

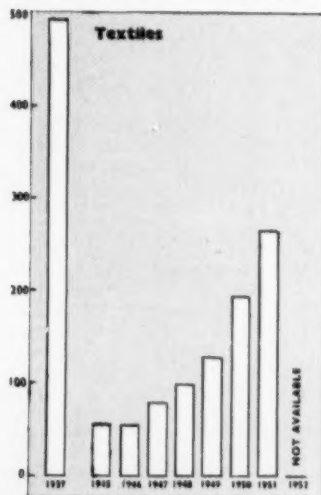
forthcoming in anything like the quantity that Japanese industrialists expected. By the end of 1952 total foreign investments and other financial assistance amounted to only £21m. In addition, some 200 contracts providing technical assistance for Japanese firms had been signed. American capital and technique make up about three-quarters of the total, with Swiss, Belgian, French and Dutch companies forming a substantial minority. Only a few British companies are involved, the most important being the Austin and Rootes groups, both of which have arranged for local assembly of cars.

Seeking Capital

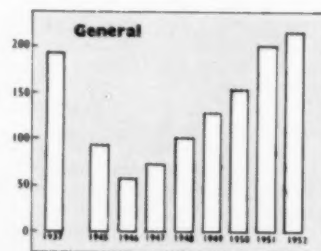
Japan's experience with the World Bank has not been much happier. Last January the government announced its intention to apply for a loan of \$300m., but was brusquely told that Japan did not need so much money, and should, in any case, seek to accumulate more capital by her own efforts. The application lapsed with the fall of the government, but the Japan Electric Power Company has recently announced that they will apply to the World Bank for \$300m. to finance in part schemes costing \$735m. The company have also borrowed \$7m. from the Bank of America.

The reaction of the Bank to this new demand is problematical, but it seems unlikely to be any more favourable than before.

The Japanese recognize the situation. A recent report of the Economic Counsel Board, the government's advisory body, pro-



Japan's Industrial Production



phies falling living conditions, rising unemployment and a limit to the expansion of exports over the next five years.

Five years from now, Japan's maximum exports are expected to be stabilized at approximately \$1,400m. The export target for the current fiscal year is an optimistic \$1,200m. World demands for textiles, in the opinion of the Board, will have fallen sharply as consumer countries become more self-sufficient. The world demand for iron and steel is also seen as decreasing. "The world is probably already over-producing raw cotton, iron and steel and other metal products."

The Japanese Government will be compelled to meet shrinkage of world markets with "a subsidy policy and other measures."

Japan will reach a limit of practicable trade expansion in the export of plant equipment and shipping. The machine industry has no hope of meeting German and European competition unless drastic rationalization in methods is enforced.

Dwindling Accounts

The present annual expenditure by the U.S. of \$780m. in special procurement orders will have been cut to a maximum of \$200 m. by 1958. In that event, also, income from invisible trade will be down to \$400m. (half the present income), as a reflection of Japan's dwindling international accounts.

Japanese businessmen have their own ideas on how to deal with the situation. When Allied forces occupied Japan, they tried to introduce political democracy

and an economic system based on competitive free enterprise. Free enterprise, argue the Japanese, has failed, and the next step is a return to a planned economy. To this end, the influential Japan Chamber of Commerce and Industry has recommended an eight-point programme to the government:—

(1) Establish a joint Government and civilian body on a supra-partisan basis with overriding powers to push a consistent and firm policy on foreign trade.

(2) Improve international economic relations by positive participation in all international economic conferences, swift treaties of commerce with as many countries as possible, continued pressure to join the General Agreement on Tariffs and Trade, establishment of a multiple trade settlement formula, and economic co-operation with, and technical aid to, South-East Asian nations.

(3) Lower export prices by rationalization of equipment and methods, and by preferential allocation of foreign currency for the import of raw materials.

(4) Authorize drastic revision of excessively liberal labour laws.

(5) Foster foreign exchange banks, trading firms and shipping companies.

(6) Co-operate with other Asiatic nations in the establishment of a central bank to be

used commonly by Asiatic peoples to conduct their trade.

(7) Improve monetary and insurance systems.

(8) Effect positive measures for opening up markets overseas.

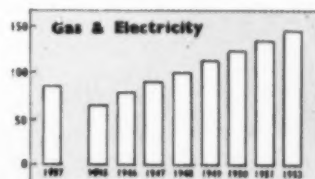
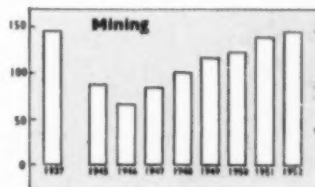
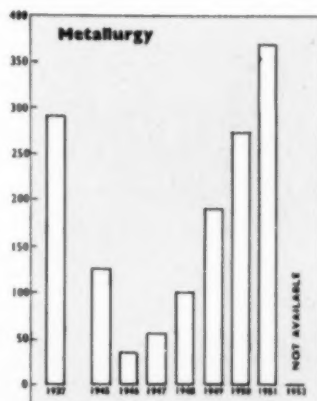
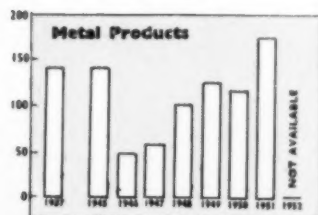
The Solution

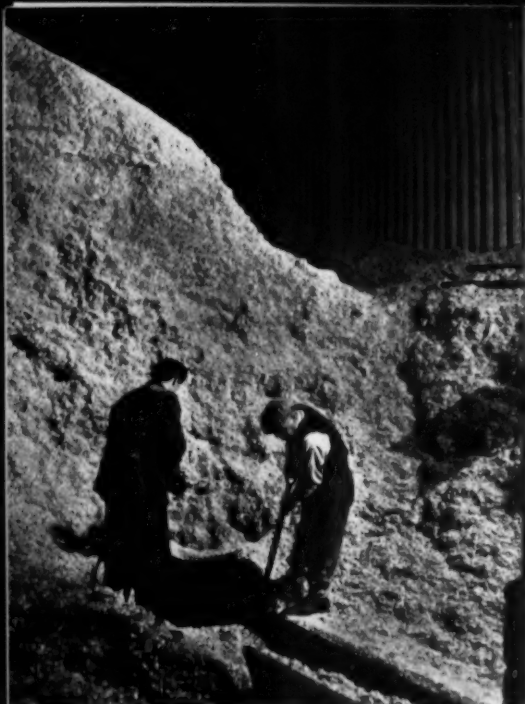
Much of this sounds depressingly familiar. It is the language of the men who were to make Manchuko the workshop of the East. But the familiarity of the preferred solution should not veil the reality of the problem. Japan must export or die. An attempt to restrict Japanese exports to existing levels would set up internal economic pressures that would in time inevitably lead to a political explosion on a par with Pearl Harbour.

The only permanent solution is an expansion in total world trade to a level at which all exporters—British and Japanese alike—can sell all they can produce. Pending the arrival of such a Utopia, Japan must be allowed to share in world markets as they exist—an unpalatable, but inescapable, conclusion.

But if Japan is to be allowed to play, other countries have the right and the duty to see that she keeps to the rules. This will not be easy, but it will certainly be far simpler than in the 'thirties, when Japanese dumping was successful simply because international co-operation in economic affairs was practically non-existent.

1948=100





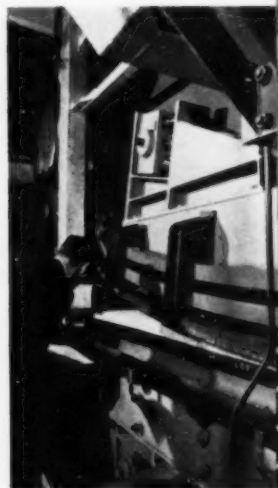
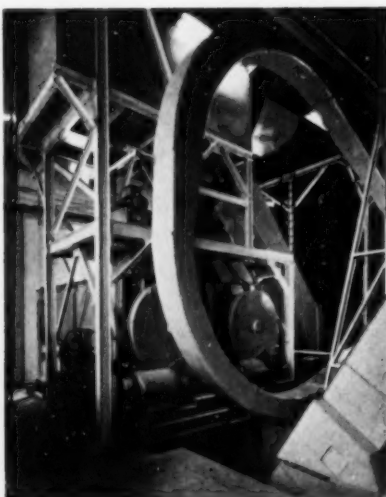
I The Bartrev continuous press consumes up to three tons of raw material per hour. This takes the form of wood shavings from sawmills and factories, which are fed onto a conveyor belt beneath the floor of the store.

First continuous plant in the world for the conversion of wood waste into timber board has been installed at Marks Tey, Essex, by The Vere Engineering Company, Ltd., and will shortly be working to capacity. Its introduction to the timber industry is claimed to be a revolutionary development, comparable to the assembly line in general engineering or the modern strip mill in steel manufacture. The press will have an annual output of 16,000 tons, or between 25 and 40 million square feet (according to the thickness of board). It can be supervised by one man.



General view of the plant

Wood Waste to Timber Board by Continuous Process

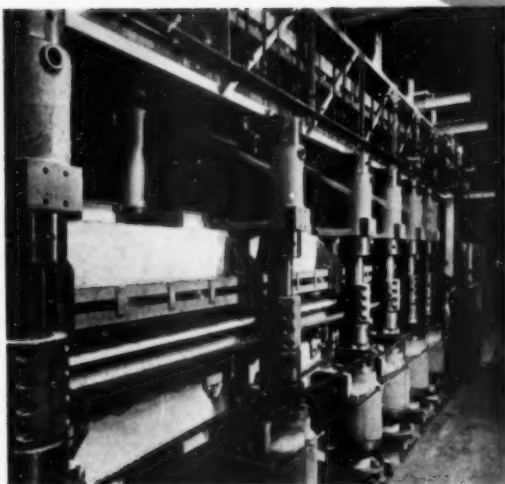


3 During this preparatory period, the raw material passes through the loop of the pneumatic drier and two mixers before being laid as a thick carpet onto the two endless steel belts of the press.

2 The chips are taken by elevator on the first stage of the journey which will convert them from wood waste into high quality board. Before going into the press, the chips are broken down into a suitable size for board making, dried, and mixed with a small percentage of resin.

4 Moisture and temperature closely interlinked throughout the process, and the raw material passes through a high-frequency press before entering this squeezing press.

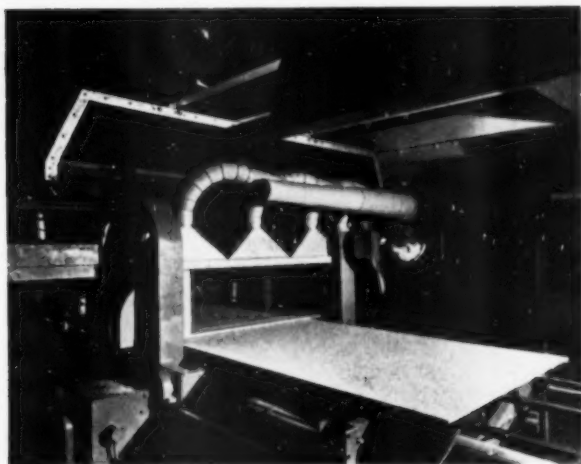
6 These main drive sprockets ensure that the moving platen chains supporting the steel bands both travel at the same speed. A device for applying paper to one or both sides of the board is also incorporated in the press.



5 Six pressure units form the pressure zone through which the material passes. This is where the actual board-making begins. The entire press is driven by an electric motor permitting speeds of between five and thirty feet per minute.



8 The finished board has a wide variety of uses, not only because it is probably the cheapest product of its kind on the market, but also because it can be worked by normal joinery methods employing hand or machine tools.



7 As it emerges from the press, the board is automatically cut to the required length and its edges trimmed by the sawing unit seen here. It is then ready for use.

How We Train Our Salesmen

Dominant problem of industry today is selling. A complicating factor is the dearth of trained salesmen. In this important series of articles, BUSINESS reports how managers of progressive firms are tackling the problem by the careful selection and training of newcomers. A further article in the series will appear next month.

A 5-Point Programme Meets To-Day's Needs

By **H. F. T. WREN**, Managing Director, Holbrooks Ltd.

In an interview with **BRIAN CUMMINGS**



BEFORE discussing methods of training, let us ask ourselves what makes a good salesman.

I have been in this selling game for a good many years, and yet I would not like to give a categorical answer. Nor would most of my friends. Sales is one of those departments of business in which it is still difficult, dangerous and probably misleading to lay down rules and regulations which are "guaranteed" to produce results.

Not long ago, the sales director of a very large concern selling to the retail trade advertised three vacancies on his sales staff. There were hundreds of applications, all of which were examined with great care and with due regard for modern techniques of selection. A short list of ten candidates was drawn up. These were duly interviewed and tested, and three appointments were made. They even had a psychologist on the job. Within a month, two of the three had to be dismissed, and shortly after that the third resigned.

Qualifications

I think there are probably three basic qualifications for good salesmen, none of which is always looked for. First is the ability of the man to mix easily in the territory in which he is going to work. Second is his ability to deal with the type of trade which it will be his business to develop. And the third is his physical capacity to do the job.

In my trade, for example, it would be folly to employ an aggressive type of man in a country district such as Norfolk; but the quality of aggression might be very useful in a salesman intended for parts of the city of Glasgow. Again, the type of man who can talk the language of a small trader operating next door to a cut price shop might not be very well adapted to conversation with buyers who are responsible for good-class stores or chains of stores.

As to the question of physical strength, do not forget that the man who has to work in the town often needs to be tougher than the one who is bound for a country district. Towns are still broken up into walking territories, and it is hard physical work to cover this type of ground when you are carrying a heavy bag of samples. The country salesman, on the other hand, will have a car and seldom needs to carry his case very far.

A problem characteristic of the times we live in is that of the older salesman and his relation to younger men who need training.

The point here is that every salesman, no matter how com-

petent, grows stale. In the days before the war, this was overcome simply by moving the man to another territory. No one thought twice about this; such a move was regarded as part of a man's development and upward movement in his career with the firm. The direction in which he was moved would, of course, depend on the personality features which I have already mentioned, but otherwise there was no limitation. Today, this whole technique is wiped out by the housing shortage, and good salesmen are "frozen" in territories to which they were sent years and years ago simply because they have homes there and none can be found elsewhere.

I need hardly give details of the result. Men who went out into new territory seven or eight years ago full of enthusiasm are now selling on their connections and personality, rather than developed techniques of salesmanship. And they make very bad companions for the young salesman.

Only a year or so ago, we employed a most promising young man and put him in charge of a

Careful selection, adequate initial training, a considered selling technique, and efficient organization of salesmen's time are keynotes of the Holbrook programme.

salesman who had been covering his territory for ten years. The youngster started in the office and then went out on his first assignment hopeful and enthusiastic. A month or two later, he left the company, disappointed with us and with his experiences. The reason? His mentor had taught him nothing. Wherever they went (it was a country trade) business was done on a "Hello! How's old Ted?" basis. The older man did not employ, or explain, the techniques of salesmanship, nor did he appear to make much effort to introduce new lines or develop trade where it seemed to be lagging.

So far, I have spoken about difficulties and dangers in trying to employ and train salesmen on the basis of generalized rules and regulations. This does not mean that salesmen should be employed by hit-and-miss or rule-of-thumb methods. I myself employ a technique of marking, and although I would be the first to admit that it does not always work, I would not care to abandon it.

Use of Systems

The things that can be done by rota should be so organized. For example, we have a carefully documented procedure for the appointment of salesmen. These ensure that the marketing director, company secretary and I give and extract the right information regarding our requirements and his prospects. By pre-arranged forms of memorandum, each of us is informed about progress, so that the new man must, in the end, take his place in the logical pattern of territorial coverage.

Next, there are the notes for guidance of the marketing director in his conduct of the course at head office. These cover introduction to me, tour of the factory,

ALL-IN-ONE : The single customer's order and record card used by Holbrooks in place of the usual salesman's order book.

introduction to the company secretary, and documentation of the trainee. Then they list discussions on methods of working territory, forms, trade classification, selling points for each of the products, sales resistances, advertising and merchandizing, price lists, and many other matters.

Finally, there is the sales manual, which is our bible in nearly everything connected with selling Holbrook products. It is a monumental work, built up over the years, and remains with the salesman as his *vade-mecum* until the end of his days with the company.

Now let me try to sum up—with a little elaboration where things could be made more clear:

First, select your man to the best of your ability and bearing in mind the points I have made.

Secondly, give him some training at headquarters but do not keep him there too long. Show him what goes inside the package and let it go at that; do not fill his head with theorems.

Third, develop his moral courage—if he does not possess it, he will not make a salesman; but there is no reason why you should not help him to make the best of his innate qualities.

Fourth, impress on him the need for a lively attitude to his products and the way he sells them. Do not let him get away with the "ours is best" type of salesmanship. Work out, as we have done, a number of good selling sentences and actions or demonstrations to go with them.

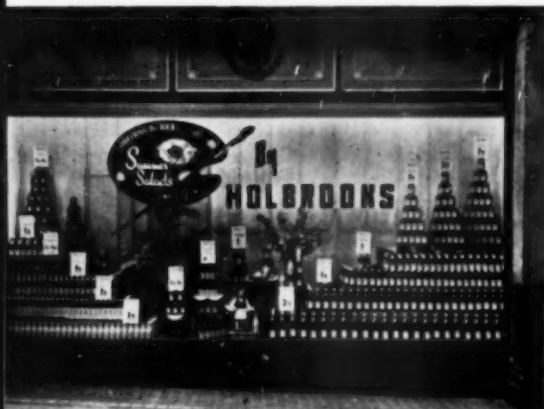
Here is an example of one of our demonstrations:

Holbrooks' products include bottles of essences which are spirituous, i.e., they evaporate when used in cooking and carry the flavour through the cake. In the old days, we used to tell the shopkeeper these essences were "spirituous" and leave it at that. It is highly improbable that he knew what we meant, but I suppose it sounded vaguely impressive.

Mildly Startling

Today we have a demonstration which, though mildly startling, has proved effective. We give each of our salesmen a little piece of asbestos which he keeps in a cigar case. The salesman goes into the shop, opens his case of samples, and draws the attention of the shopkeeper to the bottles of essences. Then he takes from his pocket the cigar case, brings out the stick of asbestos and attempts to light it. Of course, it will not catch fire. By this time the shopkeeper wonders what in thunder the man is doing, so the

END PRODUCT :
An effective display of Holbrook goods in a Nottingham retailer's window.



salesman begins to explain the point of his demonstrations and their connection with the "spirituous" essences. He dips the stick of asbestos into one of the sample bottles of essence and lights it again. This time it catches fire, and the aroma spreads through the shop. The meaning of the word "spirituous" is now obvious.

Bright Technique

This type of technique will appeal to young salesmen, and they will be glad to put it into practice. One of our young recruits who has shown himself particularly adept in the conscious application of sales techniques went on his rounds in the company of an executive director. Almost the first shopkeeper they met said, "Hello, young man, what have you got to show me today?" It would have been hard to find a more graphic demonstration of the rightness of our policy and the ability of the young man to carry it out.

And here I would add a word of praise for the schools of salesmanship. They will not turn a man into a salesman unless he has the right basic qualities, but, given these, they can train him to think consciously about his craft and to develop and adapt his methods according to particular needs and circumstances. All the training that you can provide at head office will be useless without this flexibility of mind in your sales staff.

The fifth and most important lesson is how to avoid waste of selling time. This you must drive home as hard as you can and back up with techniques of organization. Sales management as such is, of course, outside the scope of this particular feature, but it may be worth while mentioning just one technique we have adopted that saves time in the office and in the field.

Single Record

This consists of eliminating the usual salesman's order book and the documents that go with it in favour of a single customer's order and record card, which is filed in the time and geographical sequence required for each individual's tour. In our case, salesmen work on a six weeks' journey of

five days a week, and so the file is divided by 30 guide cards beginning "first week—Monday," "first week—Tuesday," and so on. The file is kept by the salesman himself and is insured.

Each card carries a wealth of detail, including the names of the customer, his trade group and trading terms, the early closing market days, the name of the buyer and his position in the firm, the type of vinegar he buys, and the depot from which supplies will be delivered. Arranged in columns right across the card, we have a list of our products with diagonal marks for the different sizes in which they are sold.

All the salesman has to do is to enter the date, the quantities of particular items ordered, and the amount of cash collected (if any). A glance at the card before he goes into the shop gives him the history of Holbrook's trading with the proprietor and a pretty clear indication of his likes and dislikes; and it serves the same purpose when the area manager goes round, and can also be used for detailed sales analysis at head office.

The time-saving quality of this

method is obvious; at the end of the day the salesman merely sends in cards for the customers on whom he has called, so that they can be used by head office for invoicing, ledger posting, credit control and the usual routine of documentation. The salesman has saved all the time he would normally reserve for "writing up," and the tedious and hazardous business of trying to interpret his writing is reduced to a minimum.

Overseas Now

In due course, the cards will be returned to him, and it is at this stage that he will know whether it will be necessary to collect cash during his next visit for the order placed and fulfilled on the previous occasion.

There is a good deal more to the system than this, but it is enough to say that it has worked so well in this country that we have applied it to our Australian and South African businesses. Here in this country it is an integral part of a sales service which covers every town and village in the United Kingdom.

Technical Training is a Vital Part of Selling

says **ERIC W. YOUNG**

Director of Distribution, Harry Ferguson Ltd.

To sell complicated equipment, a man must know its capabilities under all conditions of use. So Harry Ferguson, Ltd., put new salesmen through a thorough course in tractor construction and operation.

MANY young men seeking careers today are dissatisfied with the prospects open to them in various branches of commerce and the professions. Since the war, thousands have taken university courses in agriculture, hoping to discover a way of life coupled with a means of livelihood which will provide contentment. These graduates provide many potential trainees for the Ferguson organization. Candidates with commercial degrees and those pos-

sessing sound practical experience are also accepted for a period of further training, before becoming representatives of this company.

A constant stream of applications for such posts is received by the personnel officer. These are passed to the executive in charge of the education department at Stoneleigh Abbey, home of the Ferguson school of farm mechanization. Selected candidates are invited to attend a preliminary interview with the executive in

charge. From these will come the short list of candidates to attend an interview board.

Boards sit quarterly and consist of divisional and departmental executives and managers, with the executive in charge of education in the chair. It is possible at this stage, in the case of a candidate possessing exceptional qualifications and ability, that he may be provisionally selected by a particular department for direct entry. Other successful, but more average, candidates will be required to undertake a period of training of up to two years' duration.

Both "direct entry candidate" and trainee will be required to undergo an intensive series of courses at Stoneleigh Abbey. There they will receive comprehensive practical and theoretical instruction in all aspects of the Ferguson system.

Practical Work

Field operation and practical handling of all the implements in the Ferguson range are coupled with theoretical instruction on the tractor hydraulic system and the various adjustments of the implements. The service aspect is featured in the workshop courses, where tractors are completely dismantled and rebuilt under the watchful eye of an instructor.

After three months, the "direct entry candidate" will join his own



ERIC W. YOUNG

department for any further training required before taking up his appointment. The trainee, who is usually aged between 23 and 26, continues his training at Stoneleigh as an assistant instructor. After six months, he becomes a fully-fledged instructor capable of taking a course of students through the same curriculum that he himself has passed.

These students are not, of course, all trainees. The majority are members of the Ferguson distributor and dealer organization and come from all parts of the world. Thus the future representative is able to learn of the problems of mechanizing and increasing world food production at first hand, while in his turn passing on the technique of farm mechanization by the Ferguson system.

Further confidence and experience is gained by acting as an assistant to the lecturer on the

occasions when agricultural colleges and similar institutes request a lecture or series of lectures on Ferguson equipment as part of their curriculum; and, later, by taking charge of a series of such lectures.

Confidence

In the normal course of duties at Stoneleigh Abbey, the trainee will be required to organize and take part in various demonstrations of Ferguson equipment at work, which are provided for the benefit of certain important visitors to the school. This produces confidence in the product which is vital to any representative engaged in opening new territories and markets.

After this period of practical and technical training, the future representative is brought in to the head office for further training according to his planned future. He may spend a short period in every department before being finally attached to any particular one. If his previous experience makes this unnecessary, he joins his future department immediately and quickly learns the internal and domestic routine, so that when allotted his own territory he will be familiar with the office procedure. Normally, a new representative spends a period with an experienced representative who works established territory as an assistant, before tackling fresh markets alone.



THEORY AND PRACTICE: Salesmen pass through a full course at the Ferguson school, Stoneleigh Abbey. Above: A lecture on hydraulics. Left: Practical field instruction.

MANAGEMENT AT WORK

RECORDED TRIBUTE

A TRIBUTE to the part played by employees at the Stork margarine works of Van den Berghs and Jurgens, Ltd., in safeguarding the margarine ration during last February's floods, was heard simultaneously by the employees in the factories and the company's shareholders in London.

Chairman of the company, J. P. Van den Bergh, had advance recordings of his speech for the annual general meeting made on gramophone records which were sent to the two factories and relayed over the public address systems on the day of the meeting.

Last February, the company's



J. P. VAN DEN BERGH
From AGM to factories

Purfleet factory was badly flooded and put out of action for six weeks. During this time, their Bromborough employees worked extra shifts seven days a week to help make up for the loss of production at Purfleet, where equally herculean efforts were made to repair flood damage as quickly as possible.

ASKING FOR TROUBLE

HECTOR POWE, LTD., the London tailors, believe in making it easy for their customers to make trouble. They put in the pocket of every completed suit a reply-paid "comment card."

"When customers say they are not satisfied, we accept their statement without qualification," said

H. Lungley Powe, a director, recently. "It is worth remembering that 99 per cent. of the British public are honest. But we believe that the 1 per cent. who might be dishonest are the best salesmen for our product. They may take one 'for a ride,' but they will brag about it to the credit of the company concerned."

Returns of "comment cards" show that 95 per cent. of customers are satisfied. For the other 5 per cent., the company make every effort to meet the complaint.

"Our costs are interesting," said Mr. Powe. "The net cost of making replacements is approximately 0.8 per cent. of our total turnover. Allowances are around 0.6 per cent., making a total cost of just over 1 per cent. which, as an insurance to the customer, I consider to be a very reasonable cost. As a source of additional sales, it shows a handsome return."

Mr. Powe was addressing a recent meeting of the British Sales Promotion Association.

SELLING PRINT

PRINTERS, it would seem, are, like many other businessmen, worried about sales. The British Federation of Master Printers has officially pondered the problem, and its spokesmen considered it at length at the recent annual congress of the Federation.

For example, John Cheney, J.P., managing director, Cheney and Sons, Ltd., of Banbury, stressed the importance of backing up the salesman.

"Remember," he said, "the salesman is an expensive person. Don't forget you are paying his expenses and possibly finding a car for him as well as paying his salary. Nobody will see him before ten or after, say, four-thirty and there is that elastic lunch hour stretching from half past twelve to half past two. This leaves 4½ hours for calls and this short and precious time must not be made useless by faults elsewhere in our organization."

And he went on to ask delegates some pertinent questions:

"What sort of a scheme have you for feeding your salesmen with specimens? Does it merit the description of 'scheme'? Is it a

haphazard arrangement with the head packer to chuck one or two samples into a box every now and again? And are the samples examined for workmanship?

"Are samples kept clean and classified? Has your salesman a place to keep his samples, copy letters and suchlike? Has he anyone to whom he is entitled to dictate a letter? Has he a telephone he can use conveniently?"

"Your salesman's 'phone should be private," added Mr. Cheney. "His relationships with his various customers are things I find office staff almost incapable of understanding and there are cases when he may well want to say something like this on the 'phone': '... by the way, you remember telling me how interested you were in rugger? Well, I've got a couple of seats for Twickenham next Tuesday and I wonder if you'd care to lunch with me at say 12.30 and go down there for the afternoon.' That call may be first-class salesmanship, but can't you hear the office buzz with ill-suppressed hatred?"

TELL THE STAFF, TOO

TO most businessmen, public relations mean the somewhat tenuous contact between their own organizations and the "man in the street." For Peter Masfield, chief executive of British European Airways, public relations begin at home.

"The B.E.A.," he said recently, "has increased the capacity ton-miles per employee from 4,000 to 10,000 in four years, using substantially the same aircraft fleet. The amount of air traffic doubled, and during the past year 1,700,000 passengers have been carried, compared with 500,000 four years ago."

About 50 per cent. of that increase was due to improved methods, and 50 per cent. to the improved enthusiasm gained by creating a better understanding among all concerned of what the B.E.A. was trying to achieve.

The subject of human productivity was the biggest challenge facing industry in any of its branches. The most refined methods and the most advanced techniques of mechanical produc-

tion were of no value unless there was belief in the worthwhileness of the things to which those techniques were applied.

Therefore, in any business, there must be three components—policy formation, execution of the policy, and interpretation of the policy and information on production. Half the industrial disputes of today were due, in his opinion, to the omission of the third element—interpretation and information.

The basis of any genuine public relations effort must be that of



PETER MASEFIELD
PR work begins at home

fullest possible information both to public and staff.

Some competitive facts might have to be withheld and, apart from annual accounts, certain financial details, because of the possible effect of publication on the Stock Exchange. With those exceptions, he was for full information with no holds barred, starting at the top and going wholeheartedly all the way down.

Above all, there must be leadership to infuse the spark of inspiration in the common round.

WHO FOOTS THE BILL?

"WHO pays for advertising?" asked S. C. Tyrell, chief accountant, Newton, Chambers and Co., Ltd., and president of the Institute of Cost and Works Accountants at the recent conference of the Advertising Association. And he gave five alternative

and/or complementary answers to his own question:

1 The consumer always pays for expenditure on advertising unless the advertiser is so far in error or in ignorance of the true facts as to effect his sales at a loss.

2 Although the consumer normally pays for the outlay on advertising, he may at the same time benefit from reduction in price as a result of the lower manufacturing costs of production in more economic quantities.

3 Inadequate knowledge of the true incidence of advertising expenditure—from whatever cause—may well result in an incorrect approach to the fixing of selling prices and thus the manufacturer may pay by inadvertence.

4 The unsound basis of the present taxation system makes two things inevitable:

(a) The expenditure of surpluses over "standard profit" is encouraged and hence advertising expenditure is incurred in excess during times of seeming or pseudo prosperity.

(b) The logical and prudent procedure of setting aside profits in times of prosperity for use in times of shrinking markets is so heavily penalised that the practice is seldom followed.

The influences of taxation referred to above indicate—at least superficially—a diversion of revenue from the Exchequer.

The cumulative pressure for expenditure on advertising from sales management—effectively though unintentionally supported as it is by the weight of taxation borne by all profits above an arbitrary standard four years old—makes it unarguable that the equity shareholder is deprived of the prospect of higher dividends, alternatively, the residual value of the equity is reduced by any appreciable volume of unrequited advertising expense.

"But," he added, "an increasing awareness of the statistical and economic tests which can and should be applied to all advertising proposals is, I believe, having a salutary effect on the character and extent of the visible part of sales promotion programmes."



JAMES R. BRIGHT

Watch Handling!

TIME spent on "materials handling" in one American plant showed an annual labour investment of 8,133,060 hours, compared with the next largest operation, "testing", which occupied slightly less than 4,000,000 hours. Hours shown did not include all handling, but only time recognized and paid as handling labour. It could be assumed that 20-30 per cent. or even more handling was recorded by the accountant as part of the production operation. These startling figures were quoted by James R. Bright, M.S., M.A.S.M.E., chief editor, Modern Materials Handling, U.S.A., to the Institution of Mechanical Engineers.

Apart from expediting handling to reduce cost, industry had realized, he said, that handling was often the production bottleneck between processes. Transport loading operations represented not only a bottleneck—tying up vehicles—but a wasted expense benefiting nobody.

MR. BRIGHT suggested that handling costs should be examined more closely and that handling should be regarded as an essential operation requiring continual improvement whenever possible. He warned against the trap into which many had fallen of imagining that, to install an efficient handling system, it was only necessary to "go down the street" and buy a fork truck. In smaller plants and congested shops, the lighter, more manoeuvrable and cheaper "walkie" (pedestrian-controlled) power lift trucks were gaining wide acceptance.

Mr. Bright was giving the annual James Clayton lecture in London, repeated in Birmingham, Manchester and Glasgow.



IN THE TRADITION : Great stage names were always on Rayne's order-book. Here Edward Rayne shows a new style to Vivien Leigh.



Edward Rayne entered the family business of H. and M. Rayne, Ltd., in 1939. Today at the age of 30, he is probably the youngest company chairman in Britain, head of a business which has maintained full employment when many other firms in the trade have been short of orders. Much of this success is due to his own flair for the fashion article which he produces, developed by a thorough on-the-spot training in its manufacture and marketing.

His Fashion-sense Wins Export Orders

By LEONARD G. RULE

THE business of H. and M. Rayne, Ltd., was founded in 1889 by Henry and Mary Rayne. They made fashionable shoes for ladies—particularly for actresses. It was a successful venture which was built up carefully and solidly. It is true to say that there were very few shoe styles for women when Rayne's began. The market and the firm that was able to supply the product grew up together.

Henry and Mary Rayne left the business to their three sons and one daughter who became partners, with Joseph Edward Rayne as managing director. Progress was good and the firm began to expand. With retail shops as well as manufacturing premises, it soon became the most important business in its field.

It was Joseph Rayne who thought of using the firm's name as a publicity link with its products. The "R" was formed in the shape of a high-heeled shoe.

The combination of fashionable

elegance and first-class craftsmanship in their shoes resulted in a product which women were glad to buy, although it was costly.

In the 1930's a new factory was urgently needed. Joseph Rayne had a large share of the responsibility for its design. It was completed in 1939; to-day, it is considered one of the best and most efficient shoe factories in the world. The main production floor is topped by a gallery running round three sides, and from the office end of the gallery the whole production process can be seen.

Other things happened in 1939. One of them was the beginning of the business career of Edward Rayne, son of Joseph Rayne, who

left Harrow to learn the business of shoemaking.

He started in the new factory and, on father's instructions, learned all the operations—there are 200—needed to make a shoe. The boy was a quick pupil, in spite of defective vision. Soon he was working in the firm's retail shops, learning how to sell the shoes which he knew how to make.

In 1942, he joined the managerial staff, eventually becoming assistant to his father. His eye trouble—cataract of both eyes—had grown worse, and in 1943 a double operation was necessary to save him from total blindness. He now wears very powerful spectacles without which he can see little.

War-time production was relatively easy: it was a matter of turning out as many pairs of shoes as possible without letting the standard or craftsmanship slip too far. At the end of the war, Edward Rayne was competently carrying his share of running the business. Soon afterwards, his father's health declined and he became joint managing director.

To America

In this capacity he began travelling to countries overseas, particularly the United States and the Commonwealth. His business in America was mainly to watch the trend of styles and to observe production methods. His father had been the first British shoe manufacturer to introduce American sizes and fittings to the home market, but he had not been able to equal American styles. Even so, Rayne's shoes were beginning

MACHINES (1) : The craftsmanship which goes into quality shoemaking is supplemented by modern equipment. Here linings are being sewn to uppers in the Rayne factory.

to make an impression in South Africa, Australia and other places.

Edward Rayne began to develop a flair for style. Not only could he pick the sort of shoe that would sell, but he could help to design them in advance of fashion. He was, in fact, a first-class all-rounder in his trade, knowing how to design, to make, to sell to retailers and customers in the shop—and how to manage.

Joseph Rayne died in 1951. The company appointed Edward Rayne to succeed him as chairman and managing director. This may have seemed an obvious step. In fact, it was a recognition of the qualities of the 29-year-old man whose shareholding was by no means commanding.



He took sole charge at a time when difficulties had become apparent. For no obvious reason, business throughout the boot and shoe trade had declined. As always, the more expensive products were the hardest hit. The problem was not so much to enlarge a very successful business as to hold it where it was.

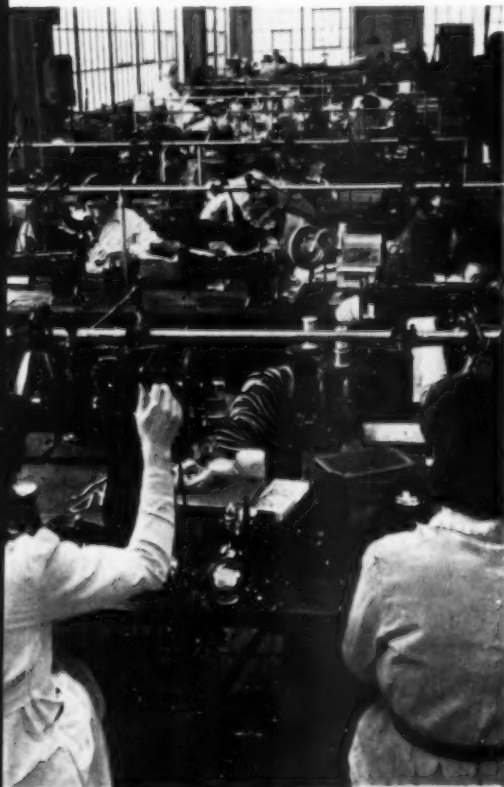
His Maxim

Mr. Rayne had inherited from his father and grand-parents a liking for his trade, great experience in shoe manufacture and selling, and a splendid factory in which worked a staff loyal to the family. He also inherited some business philosophy from his father which included a maxim of which he himself strongly approves: that there is no substitute for human endeavour.

So he applied his considerable energy and talent to keeping the factory busy. He took on the duty of chief salesman and travelled farther and more frequently. The home market was tight so he expanded overseas.

Export Drive

Rayne shoes were firmly established in Australia, but the cutting out of that market. He turned to North America instead. This was carrying coals to Newcastle with a vengeance, for he was trying to sell in the United States high-class



MACHINES (2) : A general view of the "closing room". In this department, the uppers are stitched together and perforating and similar operations are carried out.



styling he had learned there. He had two things to offer: first, his designs, which were as fashion-conscious as those of American shoes; and secondly, the superb craftsmanship of his factory workers.

Full Employment

In Canada the road was a little easier, because what American competition there was came from outside like his own, and there was a sentiment in favour of the British product. Through his efforts, Rayne's shoes began selling well in both Canada and the United States. They were selling even better in the countries of Europe and parts of the Commonwealth. The export orders marched in step with the decline in the home market, and H. and M. Rayne, almost alone among shoemakers, kept their staff fully employed.

At that time, Mr. Rayne was keeping his eyes on two targets: the first was to find sufficient business overseas to cover any further recession at home; the second was to build up an export trade for the future which would mean an ex-

SPECIALIST: He is the "clicking foreman" and he has been with Rayne's for over 30 years. "Clicking" is the 100-year-old name for cutting out the uppers of shoes with a razor-edged flexible knife.



panding business when the home market recovered.

Obstacles piled up against him. For instance, it was vitally important to market the shoe in France where their fashion appeal would find its natural home, and where it could be exploited to the full for the benefit of the overseas markets. Early hopes of a big success there declined rapidly when it was found that such imports would be drastically restricted by the French government because of currency difficulties. A small token import was all that was allowed.

Strong Position

Mr. Rayne turned to Sweden and achieved a big success. Sales in other export markets continued to rise; but the difficulties in the home market continued. It has been estimated that last year the shoe industry had to lay off more than 5,000 workers from its total of 82,000. The men and women in

the Kings Cross factory of Rayne still had enough work on hand to demand a little overtime.

The strength of the position that Mr. Rayne had built up became apparent at the end of last year when he was able to tell shareholders that the firm had passed through a difficult period successfully. H. and M. Rayne paid a dividend of thirty per cent. for the year.

New Venture

But all this is not enough to satisfy the acute business brain of Mr. Rayne. Early this year negotiations began for the firm to buy up another business of almost equal size — Randalls, a firm specializing in medium-priced shoes. This is a departure from the specialist line with which H. and M. Rayne have been so successful. Yet it is a logical step in broadening the firm's scope.

The policy with the acquisition will be to make the best possible shoes for the money in the medium-priced range. It is often a penalty of success that others profit by it. Designs produced by H. and M. Rayne which were fashionable and exclusive were popularized by other people for the mass market. Now, the popularizing process can be carried out by Rayne's themselves through an associated company.

Service Plan

First-class craftsmanship, too, can bring its difficulties. Rayne shoes, designed for a fashionable season, often turn up after years of wear for repair. This throws a light on another feature of the firm: there is an arrangement with many shoe repairers that Rayne shoes should be sent for repair to a particular firm who handle no other make. By this association, the repairers have a thorough knowledge of the way the shoes are made, and the repair work is virtually a rebuilding for more years of service.

It is, naturally, a matter of pride to Mr. Rayne that his firm make shoes for Her Majesty the Queen. In this he works closely with dressmakers Norman Hartnell and Hardy Amies. He works with them, too, in his normal trade, and because of his eye for future styles

this co-operation is extremely successful. Now, as chairman of a combine with a capital of over £1,300,000, he can spread his interests even wider.

It has been claimed for Mr. Rayne that, at the age of thirty, he is the youngest company chairman in Britain. The claim has never been denied. It has been said, too, that he is the best British designer the industry has produced so far. That he disclaims. He says that he knows how to design, and can offer his designers ideas picked up on his travels, together with his own taste and judgment. But designing is a specialist job he is not competent to undertake.

Leaves Them To It

He believes in leaving specialists to do their own jobs, giving them every encouragement, but giving them full responsibility for their work.

In the same way, he lets his factory workers get on with their jobs. They are also specialists in their own way. They have the best machinery available, but new machines are not bought without careful consideration. The test is whether the machine can do a better job than the existing process at an economic price. If it can, it is purchased; if it cannot, it is left alone.

Mr. Rayne has no pet systems. In fact, this very progressive young man is slightly old-fashioned in some respects. That does not mean he is inefficient. Far from it. But it does mean that he never chases after new theories of management because they are new.

Old Formula

He does not attach any great importance to production committees, finding that output in his factory is kept well to the mark by the old formula of workers who know their jobs and want to earn money; foremen who can control the staff they supervise; and a feeling among the people who work for him that they want to make the best shoes they can. That feeling is the product of a well-run, old established family business which prides itself on its products.

On the other hand, he has seen

the advantages good publicity can bring—they were proved for him by his forebears when they dealt with the fashion-conscious theatrical celebrities whose styles were imitated by others.

Knows His Product

His desk at the office is not the tidiest that ever was; nor does he have lots of gadgets, or hordes of secretaries. But he has the acumen to make the right decisions at the right time, and the courage to carry them through. Those are qualities many other business men may well envy him.

Altogether, Mr. Rayne is a man of high intelligence, able to assimilate facts rapidly, soundly trained in his trade, and with a flair for the fashionable commodity he sells. It is instructive that he is (or was) such a good bridge player that he represented England in international matches, for the game calls for many of the qualities of the successful business man. He has little time for bridge now. He is also a successful, but infre-

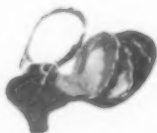
quent golfer—and golf is a game requiring great concentration if it is to be played well.

But still the most significant thing about him is his relationship with his workers. When a man works alongside people and, later, rises to control them—even if the step has seemed inevitable from the beginning—he often tends to treat them with less respect than he shows to strangers, because he finds it difficult to accept the fact that they were once his equals.

Mutual Respect

When Mr. Rayne had that sort of contact with the men who now work under his command, he found that they were competent craftsmen worthy of respect. Higher and wider experience has shown him no cause to change that view. Now, because he gives them proper respect they can feel respect for him. And because he has remained the man he was in matters of personality, they offer him loyalty based on affection. He has earned it.

MEMORIES : The knee-length boots which she is putting on were made for Lily Langtry. Other boots in the picture (all exhibits in the Rayne museum) were worn by principal boys in pantomime from the 1890s onwards



Quantitative Measurement of Maintenance

AS industry is increasingly mechanized, cost of maintenance of plant and equipment inevitably rises. And with new demands for higher wages from maintenance workers, the need to keep maintenance costs within bounds is going to be an even greater problem than ever before.

But the real problem starts even earlier—the actual assessment of such costs.

Maintenance can never be an end in itself. The only criterion of its value is the service it renders to a works or factory.

How can the cost of that service be measured?

The application of method-study and work-measurement techniques to maintenance offers one solution. The specialist team which visited the United States last year under the auspices of the Anglo-American Council on Productivity found that the ratio of maintenance man-hours to productive man-hours was lower in the United States than in Britain.

What is 'Output'?

But such comparisons are not necessarily a reliable guide to the efficiency with which maintenance is carried out. Efficient maintenance involves not only keeping production costs to the minimum consistent with safety and trouble-free operation, but also the economical employment of the material, equipment and manpower resources of the maintenance department itself. Unless maintenance can be expressed quantitatively, there can be no means of determining whether an adequate maintenance service is being run economically, or whether unsatisfactory maintenance is the result of an inadequate maintenance force or of the faulty utilization of resources.

As Sir Charles Goodeve, F.R.S., director of the British Iron and

Steel Research Association pointed out at a recent conference, productivity has a fairly clear meaning when dealing with an output of ingot tons of steel, and an input of so many man-hours, so many tons of raw material, and so many therms of fuel. In the case of maintenance, it is difficult to think of productivity in the same sense, because the output of maintenance cannot readily be assessed in quantitative form.

The vital factor is the sum of the cost of down-time plus the cost of maintenance, broken down as far as possible among the individual parts of the

By A. G. THOMSON

plant—the individual departments in the first place and finally the individual mills and even the individual open-hearth furnaces.

Then the two sectors—down-time cost and maintenance cost—can be analyzed separately, maintenance costs being brought down to man-hours, consumption rates of labour time, consumption rates of raw material, and consumption rates of overheads.

Other points to watch: Down-time results not only from inadequate maintenance, but also from slow operation of plant; abuse of plant by ignorance or accident should not be debited against the maintenance costs. And it is vital to have systems of record-keeping and costing in a form which would enable managements,

engineers and everybody else concerned to put a cash value on what was being done in maintenance.

Much pioneer work bearing very closely on this subject was carried out in the R.A.F. during the war. Maintenance of aircraft had an overriding effect on the efficiency of the Service, not only because a badly maintained aircraft was less reliable, but also because aircraft spent something like half their life undergoing maintenance.

Research work in the R.A.F. was developed along two lines: study of the relationship between operational load and maintenance manpower, and organization of the actual maintenance work to attain higher speed and reliability. In a large maintenance bay, it was found possible to organize something in the nature of a production line system for aircraft inspection, the team flowing round the aircraft instead of the aircraft flowing past the team.

The problems associated with this wartime research fall under five headings: results, costs, background information, methods and policy.

Of the four main results, three are concerned with the service: namely its safety, its reliability (in the sense of absence of breakdowns and delays) and its cheap functioning (in the sense that a badly maintained engine will be heavy on fuel and oil, and that an unreliable service wastes not only the resources of the organization but also the time of those who employ it). The fourth result is upon the morale of the staff.

Cost Analysis

Costs must be analyzed with particular emphasis upon those things which the organization finds in short supply. In a non-military organization, they will frequently, though not always, be made comparable on a money basis, but in any case they should be analyzed into component parts.

This article forms a practical introduction to a new series upon the control of maintenance costs. In surveying attempts at the measurement of maintenance "output", it analyzes the problems facing management in approaching the general question of control. Case histories of the application of work study to controlling maintenance costs will appear in future issues of BUSINESS

The ratios of results to costs give a number of criteria of efficiency which are important planning indices in forming policy.

Under background conditions are cited fluctuations in operational load and the rate of deterioration of equipment and parts of equipment.

Broad Policy

Methods are put into two classes: firstly, methods of avoiding repair work by inspection or withdrawal, depending on the deterioration properties of the parts concerned; and secondly, methods of effecting repairs and of carrying out inspection. The study of these methods will require an analysis of the job to be done, leading to problems of design of equipment and to human problems of quality and speed of work and of satisfaction in work.

From the available data it appears that there are five broad headings of policy in connection with maintenance work:

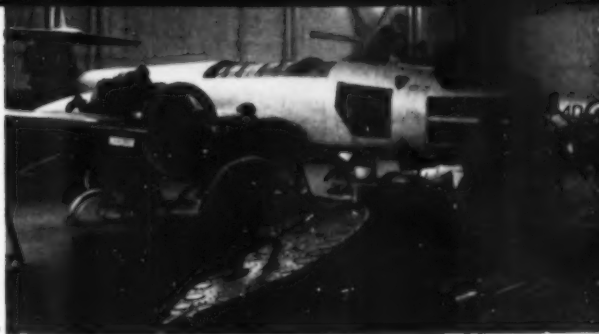
1 Choice of methods of doing work, organization of maintenance work, etc.

2 Manning policy, having regard to the fluctuations in load, and the need for a balance between occasions when men are idle for want of work and equipment is idle for want of men to service it.

3 The problem of economic balance between keeping so low a level of spares that operations are held up for want of them; and so high a level that the

SERVICE STUDY: Work of maintenance teams such as this formed the basis for R.A.F. research

Crown Copyright Reserved



policy is made uneconomic by reason of the capital tied up, the cost of storekeeping, deterioration of parts in store, etc., and the quantity of spares left over when the type became obsolete.

4 The problem of deciding whether to keep all equipment until it wears out, to replace it at a fixed age, or to have criteria such as those used in the United States Air Force by which the decision to scrap or to repair depends both on age and on amount of work that would have to be done in repair.

5 The question of inspection policy; of what can be the subject of inspection and how often to inspect, depending on the nature and the rate of deterioration and the extent to which parts discovered to be below standard can be put right.

There is no formula which can be generally applied to the quantitative measurement of maintenance. Each industry must approach the problem from its own direction according to its own circumstance and needs.

London Transport, for example, keep a well-organized statistical watch on breakdowns, wear

and tear, etc., and the figures give them information about the age at which to replace vehicles or parts. The General Post Office has carried out similar research in connection with the maintenance of its vast quantities of telephone, telegraphic and wireless equipment. So, too, have many private enterprise firms.

In the case of the London Transport Executive, the majority of the engineering maintenance staff is not, paradoxically enough, engaged on "maintenance work" in the true sense of the word, but on servicing. This includes items such as fuelling, oiling, washing, sweeping out rubbish, vacuum-cleaning, shunting vehicles around the garage, attending to destination blinds and fare-tables, posting or removing advertisements, etc. Such work is carried out not only "after hours" (i.e., between close of traffic one night and start the next morning) but also during slack hours when a percentage of the vehicles is not in use.

Demarcation

At the same time, a man who replaces a faretable ("servicing") might within a few minutes be pushing a trolley with an engine on it for overhaul ("maintenance") as well as performing a host of similar jobs during his turn of duty. The detailed break-down of his time would be of little practical value to management. But both road and rail fleets are maintained on the assumption that certain percentages will be at all times in the hands of the engineers for this class of work. The percentages were calculated statistically with full regard to factors such as the desired frequency of inspection, the desired frequency of overhaul, the safety of passengers, the reduction of failures of equipment, the facilities and staff available for carrying out the work, and so on.

AT THE PITS: Periodical maintenance work on London buses at the Victoria Garage

Courtesy of London Transport Executive



How Incentives Raised A Dealer's Turnover



By JULIAN ACOMB

EFFECTIVE incentive schemes are hard enough to install and operate in a manufacturing concern, where a worker's output can at least be measured accurately in concrete terms. In a trading concern, where responsibility for an increase or decrease in sales can rarely be pinned down to any individual, the difficulties are infinitely greater. That incentive schemes can be used, however, and used successfully, in such concerns is proved by the experience of a handful of firms. One of these is the Hollingdrake Automobile Co., Ltd., of Stockport

Hollingdrake are an old-established family concern of automobile engineers, motor body builders and retail distributors of cars and tractors. They are the largest distributors of *Standard* cars outside London, and also distribute *Triumph*, *Rolls-Royce* and *Bentley* cars in their area. Through three subsidiaries, they handle *Dodge*, *Ford*, *Morris* and *Rover* cars and *Ferguson* tractors. The nine departments of the parent company (which include a large repair shop and a body building shop) and the subsidiaries employ a total of about 400 workers.

Immediately after the war, management control passed into the hands of a new generation, and the last few years have been a period of rapid change in management methods. One of these changes has been the introduction

of a bonus scheme under which every employee of the company receives an incentive payment.

The genesis of the scheme goes back to 1946, when R. Hollingdrake, the new chairman and governing director, promised his workers to introduce some form of payment by results. The next two years were a period of abortive experiment. A scheme based on time study was introduced, but conditions were so inappropriate that it often took longer to fix a rate than to do the job for which the rate was being fixed. For a short period, output dropped by as much as 50 per cent. The scheme was dropped; so were several alternatives. Finally, the job of devising a satisfactory scheme was passed to H. Kell, F.C.I.S., the company secretary.

Mr. Kell based the scheme that

he produced on two principles:

- 1.—An increase in gross profits that does not involve capital expenditure or increased overheads is tantamount to an increase in net profits, and
- 2.—The ratio between the amount paid out in wages and the amount received from sales is, for all practical purposes, constant.

From the balance sheets of the last three years, Mr. Kell computed the average wages-sales ratio during this period for each department and each subsidiary. He found, for instance, that in the repair department of the parent company a return of £4 5s. had been received for every £1 paid out in wages, while for the stores department the figure had been £27 and for the general office £34.

In some departments, the

A novel method of computing bonus "norm" is the basis of the incentive scheme operated by the Hollingdrake Automobile Co., Ltd. Output of all sections, including repair department and general office, is calculated in terms of "sales" and bonus is payable upon percentage increase over a target figure estimated from 1948-50 performance.



The Stockport premises of the Hollingdrake Automatic Co. Ltd.

"sales" represented, not sales to the public, but the transfer of work in progress to another department; in such cases, the "sales" were booked at the full retail price of the goods in question when completed. In the case of the general office, the "sales" represented the entire turnover of the business, less sales of cars and tractors. This omission was due to the heavy fluctuations in such sales, which would have meant heavy and inequitable fluctuations in the bonus paid to the office workers.

The actual ratios obtained from examination of the 1948-50 figures were then adopted as targets for future years. Bonus was — and is — paid to the workers in each department in proportion to the performance of the department as compared with estimated performance calculated from the 1945-48 ratio.

In the stores department, for example, the actual wage bill of the department in any one month is multiplied by 27 to give the target

figure of sales which must be reached by the department before any bonus is paid. The amount of sales achieved over and above this target figure is then expressed as a percentage of the target, and each worker in the department receives this percentage of his basic wage as bonus for the month.

Thus, if the target for sales is £10,000 and the actual sales achieved are £11,000, the bonus is simply

$$\frac{11,000 - 10,000}{10,000} \times 100$$

or 10 per cent. Each worker in the repairs department will then receive, on the first pay-day after the end of the month, a bonus equal to 10 per cent. of his basic wage.

The calculation is cumulative through the year. Wages and sales figures used in February are those for the first two months of the year, those in March the first three months, and so on.

The system, first introduced in 1951 in a single department but rapidly expanded to cover every worker in the parent and subsidiaries, is felt by management to have three great virtues:—

1 It is simple to operate. The ratios from which targets are calculated were worked out once and for all in 1950. They have not been adjusted in the last two years, and it is not intended that any adjustment should be made in the future. Such a step would, in the opinion of the management, be tantamount to "cutting the rate" and so destroying the confidence of workers in the integrity of the scheme as a whole. The monthly figures of actual performance, from which the rate of bonus payable is calculated, are produced by the accounts department as a normal routine, and the extra work involved in calculation takes one man half an hour.

2 It is easy to understand. The only figures involved are simple totals of wages paid and sales achieved. They are displayed on the company's noticeboards, so that every worker can (if he wishes) check them and calculate for himself the bonus he should receive. Not only is justice done, but justice appears to be done.

3 It is rapid in action. Full trading results, thanks to an efficient punched card installation,

Continued on page 78

The main repair shop. Repair work is measured in terms of "sales" for the calculation of bonus





Director's
Office
of the
Month

SIR CHARLES COLSTON, C.B.E., M.C., D.C.M.

Chairman and Managing Director, Hoover Ltd.

AS chairman and managing director of Hoover, Ltd., Sir Charles Colston travels about 30,000 miles a year. Engineer, trade ambassador, builder of the Hoover organization in this country, he is one of Britain's doughtiest fighters in the battle for exports. In Britain and in many world markets he has made the name of Hoover famous for electric cleaners, washing machines and electric motors. And he means to keep it so; to him, trade recessions and import restrictions are a challenge to greater effort. He is moved by a spirit of optimism. He has the courage to develop new products and launch new enterprises, a courage which is based on sober judgment and long experience. This is the foundation of his positive philosophy.

Hoover executives work to a carefully designed administrative plan which enables Sir Charles to act as chief planner and policy maker as well as to carry out important missions abroad in order to develop new markets. But the periods which he spends in the office are intensely busy. Nevertheless his own personal staff describe him as a most "uncluttered" man of business. And this much is plainly evident in his

office, which is clear of files, safes, charts, dossiers and the rest.

Sir Charles is very much the "whole man": and in the office there is no attempt to separate the industrialist from the family man, or the family man from the sportsman. In his office are photographs of his family, of Winston Churchill and of Mr. H. W. Hoover, founder of the Hoover company. Some of the occupations of his limited leisure are indicated by a pamphlet about gun dogs and a cabinet full of fishing tackle—which, by the way, is frequently out on loan to his lieutenants.

Books are there in plenty, and again they show the variety of interests: J. C. Smuts' biography, Chester Wilmot's "The Struggle for Europe", the *Observer* pamphlet "Re-thinking Our Future" and—typical of the outdoor man—"Harpoon at a Venture". Finally there are albums recording events concerning his company of great personal interest, not least one which bears the names of all those hundreds of colleagues and employees who subscribed a year or so ago to the presentation of his portrait by James Gunn.

Specially photographed for BUSINESS by F. Duncombe Honiball, A.R.P.S.

For the A. C. Nielsen Co. Ltd., marketing research specialists, the office is a production department and the speed and accuracy of its work are vital. This article describes how Nielsen's evolved incentive schemes based upon output gradings which have improved both productivity and quality, as well as reducing relative salary costs.



Checking figures on incoming forms is one of the processes "broken down" for bonus calculation

THE business of a marketing research organization is to elicit, process and distribute facts and figures. Obviously this creates a major problem in the handling of paper work: reports and charts are the very stuff of their existence and office management takes on the importance usually reserved for manufacturing departments.

So it is with the A. C. Nielsen Co., Ltd., of Oxford, whose researches into the distribution and sale of food and drug products entail the employment of no fewer than 400 workers in this country alone. Significant is the fact that the executive in charge of the physical processes associated with the creation of reports is described as the production manager—not the office manager.

The work of the Nielsen Company is to provide manufacturers with constant measurement of the movement of certain commodities, chiefly food and drugs, in and out of retail outlets. Nielsen researchers provide facts on which clients base vital decisions affecting their marketing policy—facts regarding consumer sales, retailers' purchases and stocks, distribution, etc. In short, the Nielsen report shows what is happening to a product at the point of sale.

The service is constant and the data format is standard, but the interpretation of the results is individual to each client and a personal presentation of interpreted

findings is made by client service executives. Service is continuous in that the client will receive on each of his commodity classes a two-monthly report enabling him to observe trends as soon as they become evident.

Reports feature figures taken from a statistically representative sample of retail grocers and chemists—850 grocers and 550 chemists. These figures are projected to the "universe level." Each retailer permits a Nielsen

tion of large quantities of statistical material has involved the large-scale installation of complex machinery, equipment and systems, including electronic calculators.

The preparation of report data and charts requires not only the brain-work of experts but the effective organization of departments for mass production. The standard of accuracy is that of a machine shop, and the requirements of speed are even more testing since the value of the end product—facts and figures—depends upon the speed at which it can be produced. The whole business of producing a Nielsen report is complex, but the management of the company have succeeded in obtaining a measure of mass production by reducing calculations, checks and other operations to routines. This policy was dictated not only by the volume of work, which is huge, but also by the considerations of speed. One result of simplification is that the company are able to employ a large proportion of young workers in the production stages—many of them girls between school-leaving age and 21.

One interesting aspect of Niel-

By DAVID EARLY

field worker—of whom there are 60—to visit his shop every two months, carry out a complete stock count of all the commodities covered by the Nielsen service, and record from invoices details of deliveries made to the shop since the previous call.

The arrival of such a volume of data at the head office in Oxford creates a problem in what is best described as "office manufacturing"—and therefore demands attitudes and methods which are usually associated with a manufacturing industry. Mass produc-

How 'Figure Factory' Fixed Bonus Gradings

sen management is the part played by incentive schemes. The application of payment by results to clerical operations has always been regarded as especially difficult. Nielsen have shown that this view is mistaken. One of their schemes is very simple and straightforward and has its equivalents elsewhere; but at least one other is very unusual indeed and would be regarded by most organizations as incapable of practical development. True it has had its growing pains, but these are now past and the scheme flourishes. So indeed do all the Nielsen schemes and their success augurs well for further developments along similar lines.

Three schemes are in operation at the present time. The first is described in some detail and the other two (which have similar characteristics) more briefly.

Punched Card Department.
The first incentive scheme was applied in the most obvious department of the "figure factory," viz., the key punch section of the tabulating department: obvious because the unit of work can be calculated quite simply. Let us begin with the staff.

At the time the scheme started, the staff numbered 20, all girls. Most of them came straight from school and all had to be trained, for there was no comparable installation of punched card equipment in Oxford from which to draw skilled or semi-skilled operators. There were two further problems on the personnel management side: one—dictated by custom—was the payment of "wage for age" up to 21; the other was the limitation of opportunity for promotion. Here was the possibility of frustration only partly mitigated by merit money. Further recognition of efficiency was needed not only in terms of pay, but also in some form of "public" recognition for the quality of service given.

A full investigation was made by the company's own psychologist, who went into the section and spent some time doing the actual work of the department and discussing its problems with the girls themselves. He listened to their complaints and invited their suggestions for improvements. Those having to do with amenities were adopted as soon as possible within the limitations of the build-

ings in which the work was carried out. The next stage was a discussion between the psychologist, the personnel manager, the department head and the supervisors, the aim of which was to formulate a motivation or incentive scheme to meet the need that had been revealed.

A tentative scheme was evolved and discussed with the staff. It covered punch operators and provided for payment of an addition to basic wage when four different gradings had been reached. The operator had to achieve a certain output of punched cards over a period of four weeks and this figure, weighted for error and scrap, brought her into one of the new gradings. Salary was adjusted on the Friday following the end of each four-week period. (See Table 1.)

An important part of the scheme was the display of group records. Each week individual performances were charted, discussed and seen by all the members of the section. This was a means of giving "public" recognition to performance.

The scheme was first introduced in September, 1950, and after seven months the section was able to record production increases of up to 13 per cent. for the whole group, while scrap and wastage had fallen by more than 50 per cent.

Revised Gradings

At the end of the period, however, it had also become evident that revision of the gradings was necessary. The increase in production was smaller than anticipated and further discussion of the scheme with the operators showed that the gradings were too widely spaced. Girls who made the effort to reach one grade were discouraged by the time it took to arrive at the next.

A revised scheme was worked out, this time with six gradings. At the same time, the additional payments were increased while the operations covered by the scheme were widened to include verification. (See Table 2.) After another year, output of the punch operators had increased a further 20 per cent. and wastage had been reduced, whilst production of the verifiers had risen by no less than 50 per cent.

At the end of 1952, the scheme

KEY PUNCH SECTION

Table 1

Original basis—September, 1950

Gradings as follows:—

Cards per hour

Up to 100	basic wage
101-140	plus	2s. 6d.
141-210	5s. 0d.
211-280	7s. 6d.
over 280	10s. 0d.

The speeds in the above gradings represented total punching output, less one card for each percentage of scrap, and one card for each percentage of error. For instance, an operator producing 215 cards per hour, with 5 per cent. scrap and 1 per cent. error, would for grading purposes come within the 161-210 cards per hour bracket.

Special allowances were made for the punching of types of cards normally taking longer to produce, i.e. for one type an allowance of "plus 3½ per cent." was added to output figures. In the case of a completely unfamiliar special job, the number of cards and time spent were deducted.

Table 2

Revised Key Punch Scheme—September, 1951

Gradings as follows:—

Cards per hour

Up to 100	basic wage
101-140	plus	2s. 6d.
141-180	5s. 0d.
181-220	7s. 6d.
221-260	10s. 0d.
261-300	12s. 6d.
over 300	15s. 0d.

The additional allowances for jobs taking longer than normal to complete were not altered.

Scheme for Verifier Operators—introduced September, 1951

Gradings as follows:—

Cards per hour

300*	basic wage plus	10s. 0d.
301-375	12s. 6d.
376-450	15s. 0d.
451-500	20s. 0d.

*Normally, an operator would not be verifying unless she were capable of verifying 300 cards per hour.

For each punching error found by a verifying operator, one card was added to the verifier's output total.

Table 3

Current Scheme for Punch Operators

Revised gradings as follows:—

Cards per hour

101-140	basic wage plus	2s. 6d.
141-175	5s. 0d.
176-200	7s. 6d.
201-225	10s. 0d.
226-250	12s. 6d.
251-275	15s. 0d.
276-300	17s. 6d.
over 300	20s. 0d.

was temporarily suspended while changes were made in the work methods. New observations of performance had to be taken, but by February of this year the scheme was again in operation with only slight revisions. (See Table 3.)

The gradings are based on past performance—important aspect of the Nielsen method and one which was emphasized in all discussions on incentive schemes is consultation with staff from the earliest stages. First schemes should always be regarded by both management and staff as experimental and subject to revision. Standards of performance and pay can be revised in the light of experience, but care must be taken not to withdraw the incentive as soon as it becomes attainable.

2 Checking Department. This department employs about 55 people, mostly girls, whose job is to check figures entered on forms by the fieldmen. The incoming flow of forms is continuous and so also is the work of checking and controlling the data. Its importance can hardly be over-emphasized and yet the work has been found capable of coverage by

and (c) the "transferring" section.

The job of the first section was to check totals, calculate changes in stock, transfer figures from one part of the column to another (this particular operation has since been eliminated) and enter figures from a factor book. The second section added individual entries within the column to check against the fieldman's totals, divided units in order to arrive at average prices and carried out various other straightforward "plusing" and "minusing" calculations to agree one set of figures with another. The last section, of course, simply transferred figures from one form to another.

After the introduction of the incentive scheme, the average number of columns handled by each operator in one week rose from a peak of 3,607 before the scheme to 6,396 afterwards and the rate of error dropped by 30 per cent. In the calculating machine section, the number of columns handled increased from 6,554 to 11,965, whilst the proportion of mistakes dropped by about 15 per cent. The increase in productivity of the transferring section was the difference between 15,000 and 19,000

items. In their case, however, the margin of error did not alter.

A further advantage of the scheme was that newcomers to the checking section of the department were able, after two months' training, to reach an output level no less than 80 per cent, higher than that of trainees who came in before the scheme was operating. In the calculating machine section the improvement was even more spectacular, since the average level after two months was 6,250 columns for post-incentive scheme recruits compared with 2,600 columns for older hands. Still another result was a reduction in the figure for labour turnover in the whole department.

Marked Influence

Nielsen's own comment on the results is that they should be viewed with what might be described as restrained optimism. Some of the increases were undoubtedly due to changes in methods of supervision and in other aspects of management. Even so, it would be impossible to deny that the incentive schemes have had a very marked influence on performance.

Changes in methods inevitably bring their own complications as far as incentive schemes are concerned, and Nielsen's have had their full share of this kind of difficulty. The whole of the checking department scheme had to be brought to a temporary halt in the summer of 1952 while the three sections were disbanded and re-formed into teams, each of which included representatives of the three types of work—clerical checking, calculating machine and transferring. Measurement of individual performance could no longer be carried out with the same degree of accuracy and so a group bonus system had to be devised based on the assumption that departmental management would set a number of items per hour to be completed for each period of one month. The incentive itself was made to take the form of a bonus paid to the team after the number of items set was completed satisfactorily within the specified time. The bonus was, of course, paid to each individual member of the team and was quite distinct from salary.

This scheme also has worked

Column Units

an incentive scheme without loss of accuracy and, indeed, with all-round improvements in productivity and quality of work done.

Here again the secret is simplification and the analysis of units of work. In this case, the unit is the item column on the form which gives information covering stock, deliveries, value, credits and other aspects of the sale of goods in very great detail. The operations are arithmetical, but simple enough to conform to clerical standards.

A scheme was established in 1951 which had the same basic characteristics as the one applied to the key punch operators: i.e., gradings were established with weightings for error. Measurement was based on past performance and salaries were revised in much the same way as those of the key punch operators. (See Table 4.)

The scheme was applied to three distinct sections of the checking department: (a) clerical checking; (b) calculating machine section;

CHECKING DEPARTMENT

Table 4

Scheme as introduced September, 1951
(discontinued June, 1952)

Work records showed, for each month and each operator, total item columns worked, total hours, average weekly items, total errors, percentage of errors on actual items.

Figures of average of items per 40-hour week were used for grading purposes. For each given percentage of error a certain number of items was subtracted from the total output figure.

Checking Section

Items per week

First grading: 3,250 ... error penalty 200 items for each 1 per cent. error.
Second grading: 3,500 ... error penalty 300 items for each 1 per cent. error.

Comptometer Section

First grading: 7,000 ... error penalty 50 items for each 1 per cent. error.
Second grading: 8,000 ... error penalty 100 items for each 1 per cent. error.

Transferring Section

First grading: 10,000 ... deduction of 100 items for each 1 per cent. error.
Second grading: 11,000 ... error penalty of 200 items for each 1 per cent. of error

perfectly well, though not long enough for definite and statistical conclusions to be drawn. During the first period, the operators finished their allotted task with a margin to spare.

3 Charting. This is, perhaps, the most remarkable of all the incentive schemes in the Nielsen Company, for it is applied to people whose job it is to prepare charts. This work involves the layout and scaling of figures, lettering and figure writing and colouring, all of which are extremely difficult operations to assess or measure in terms of past performance. Moreover, the standard of work must be good and the number of variations in format are very considerable.

The charts are used for graphic presentation at meetings in clients' offices and for inclusion in final reports; hence their accuracy is vital. And whereas in earlier schemes the people affected were in the lower ranges of weekly salary, those in the charting department belong to higher grades of clerical employment. The main problem, however, remains in the form of work variables.

The management were faced with two alternatives: they could carry out a detailed evaluation of work over a long period and try to arrive at a standard work unit (e.g., chart lines); or they could assume that over a period of a month one type of work would balance with another and nobody would be unduly affected by the variations.

The second course was chosen and once again the importance was seen of consultation with the staff at all stages. Gradings were established on a points system and these in turn were calculated after discussion with supervisors and an examination of previous chart completions. (See Table 5.) In due course, the scheme was put into operation in the layout, writing and colouring sections of the charting department. Salary levels were published showing the payments that would be made when each points grading had been reached at the end of a working period of four weeks. Once again there were four gradings in each section, but in this case separate levels had to be set for male and female staffs. Furthermore, in addition to output and error, a

third work factor had to be considered: appearance. The confidence of staff and management in supervision had to be very great indeed, for on it depended fair work allocation.

The first scheme was accompanied by a warning that it was experimental and subject to alteration; and indeed change had to be made very quickly because it was discovered that almost everybody in the department achieved maximum grading almost immediately. The first calculations on past records had obviously been wrongly based, but the scheme also showed how much time had been spent in unecono-

mic "perfection" of letters and figures.

Further consultations took place with the supervisors. The high rates were paid for one month and then the staff were regraded after consultation. At the end of the second month, management discovered that they had gone too far in the other direction, with the result that a number of operators were due to receive little or no increase in salary for a marked improvement in productivity. However, before payment of salaries based on the amended gradings, a retrospective re-amendment was introduced so that recognition was given for new levels of output.

On reflection, Nielsen management are apt to say that the mistakes at least demonstrated to the staff their own good intentions and willingness to play fair. Results to date are comparable with those in the other departments. Output of the writing section has increased by 38 per cent. after four months and is now 42 per cent. above the pre-scheme level. Output of the layout section is up by 65 per cent., whilst that of the colourists has also increased substantially.

It is also worth noting that during the entire operation of all schemes, only three operatives fell back from their gradings. In all cases the trend was noted before the period was up and the girls concerned were invited to discuss the problems with their supervisors, whose aim it was to help them regain their former standards. Two of them succeeded in doing so and were never degraded at all; the third left the company.

Extension Plans

Salary costs have actually fallen in relation to the amount of work handled and it is hardly surprising that the Nielsen management plan to extend incentive schemes to other clerical operations.

To top it all, the figures for labour turnover of weekly paid staff are even lower now than they were before the schemes were introduced. The total per annum is currently 22 per cent. Ten per cent. leave for domestic reasons, 4 per cent. go to other jobs and only 8 per cent. leave for all the reasons that go under the heading of "miscellaneous."

CHARTING DEPARTMENT

Table 5

Although many other variations occur in charts, the only ones specifically recognised in the points grading system was that of "Re-Write" and "Last Figure" charts. In the first case, a "Re-Write" is a chart written completely afresh, whilst "Last Figure" consists of a chart on which it is necessary only to add current period data to a chart previously written.

Six points were allocated to a "Re-Write" and one point to a "Last Figure".

Gradings for original Scheme and first and second amendments were as follows:—

Gradings	Original Scheme		Second Amendment	
	Points	Points	Points	Points
Layout Section: Based on 1 Re-Write = 6 points. 1 Last Figure = 1 point.				
A plus	—	2000	1630	1630
A	1010	1750	1530	1530
B	900	1550	1380	1380
C	760	1400	1280	1280
D	625	1200	1180	1180
E	—	1000	980	980

Errors: Error recorded after section work: 6 points penalty

Writing Section—Points basis: as Layout Section

	Men		Women		Women	
	Men	Men	Women	Men	Women	Men
A plus	—	—	1750	1575	1390	1100
A	970	830	1500	1350	1190	950
B	860	750	1250	1125	990	850
C	720	645	1000	900	890	750
D	585	510	900	810	790	700
E	—	—	800	720	690	600

Errors: As Layout Section

Colouring Section—Basis: 1 coloured chart = 1 point

	Points	Points
A plus	—	1600
A	1200	1300
B	1050	1150
C	900	1000
D	750	850

Errors: 1 point deducted for each chart returned for correction.

Scheme currently operated—incorporates unchanged points gradings.

ALL YOUR RECORDS—SAFE, ACCESSIBLE, IN A NUTSHELL

One positive answer to rising costs—MICROFILM



One world-famous firm to install Burroughs Microfilming is John Player & Sons of Nottingham. In their offices, this fast and efficient storage system is being used on correspondence, accounting and personnel records—to save space and facilitate references.

THE RECORDER

Photographs documents both sides simultaneously or one side only as desired; highly automatic; requires no skill to use.



ALL DOCUMENTS, however important the information they hold, are finally just so much paper. Vulnerable paper; bulky paper; paper eating up its weight in gold at the current cost of filing space. Paper, never quite where it's wanted when it's wanted, wasting the expensive time of employees who have to trace or replace one particular document.

It's not surprising that so many firms prefer to substitute the infallible microfilm equipment marketed by Burroughs. Here, in three compact units (two, if you don't wish to process your own film), is a complete and efficient storage-system for all records, that saves you over 99% of your present storage space. On the Recorder, up to 400 documents a minute can be transferred to microfilm. One spool will hold, for example, approximately 20,000 cheque-size documents or 9,000 of your letters. Over 200 spools, properly indexed, fit neatly into a cabinet just 36" x 10½" x 16" in size.

Indexed and in order, there are your records, ready for immediate reference on the screen of the Reader.

Like all Burroughs machines, these microfilming units (British made by G.-B. Equipments Limited, to Bell & Howell design) are kept in top condition by Burroughs Service. Burroughs also operate a speedy Processing Service for clients who do not wish to have their own Automatic Processor.

Call Burroughs today; ask to hear more about microfilm. Burroughs Adding Machine Limited, Avon House, 356-366 Oxford Street, London, W.1. Sales and Service offices in principal cities.

CALL IN **B**urroughs
ON *microfilming*

CONTINUOUS STATIONERY ...

... the modern way

NO.	Q.R. NUMBER	PART OR CODE	Q. CODE	Q. CODE	Q. CODE	Q. CODE	Q. CODE	Q. CODE	Q. CODE
1	2	3	4	5	6	7	8	9	10
GOODS WHITE PINK BLUE ORANGE REDDISH GREEN BROWN RED YELLOW RELIEF WHITE GREEN BLUE GREY BROWN NAVY BLUE PINK & RED									
SUPPLIER: "L. J. M. Engineers Ltd.									
CARRIER: B. R. PACKING: D. CARRIES: DATE: ADVISE: 784									
DEPT: C. H. WORKS: N/4617 MATCH DELIVERY NO: 755 FIRST D. B.									
QUANTITY: 36 UNIT: 22 DESCRIPTION: NUMBERING HEADS									
PACKED BY: _____									



Two standard automatic punch cards typed simultaneously with a four-part "Goods Received" set, on a normal manual typewriter, solved a problem that had cost one of the Nation's leading engineering firms many lost hours, and proved once again, the flexibility of the Econojet Typewriter Attachment and Econoset Continuous Stationery.

From a simple Invoice set to a system such as the one referred to above, the Econojet provides a simple and inexpensive method of eliminating waste time in the handling of carbons and forms.

The Econojet is fully automatic, moving carbon sheets smoothly from the typed set to the succeeding one—no interference with normal use of typewriter—formhead alignment without holes in stationery—no special carbons—no weight on typewriter—additional copies at will—sets of differing length may be used without mechanical adjustment.

—here indeed is
Continuous Stationery the modern way

Econojet

Econoset

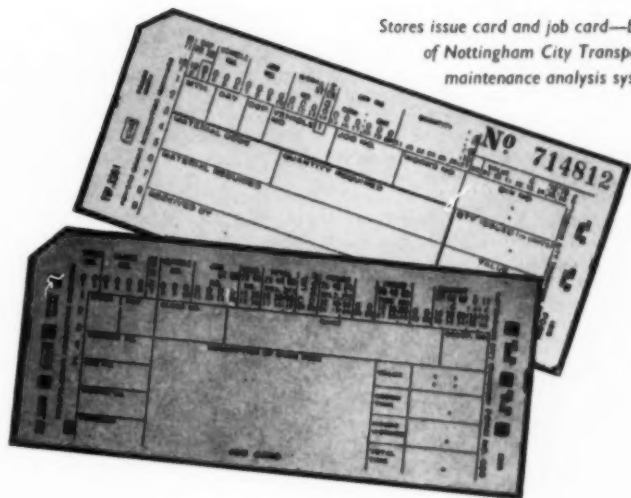
PETTY & SONS LTD.
WHITEHALL PRINTERIES, LEEDS 12
TELEPHONE 32341 (5 LINES)

BY making more information available and eliminating the time lag which reduces the practical value of statistical information compiled by traditional methods, punched cards have enabled Nottingham City Transport to keep a very close watch on operating and maintenance costs. As a result, these costs have increased by only about 25 per cent. since 1945.

The undertaking operates road passenger transport services in the City of Nottingham and its surrounding districts. With 2,280 employees on its payroll, it runs a fleet of 270 motor buses and 153 trolley buses. During the last financial year, these vehicles covered a total distance of 12,886,925 miles.

This large concern first installed punched card equipment in 1944. The installation has been extended from time to time and now com-

Stores issue card and job card—basis of Nottingham City Transport's maintenance analysis system



Punched Card System Checks Road Transport Operating Costs

Speedy recording and analysis by punched card equipment has enabled Nottingham City Transport to keep a rigid check upon operating and maintenance costs of its large road passenger fleet. Results: (1) Costs have been minimal; (2) Increased traffic has been handled without commensurate increase in the size of clerical staff.

By RICHARD LAWRENCE

prises seven electrically-operated key punches, two tabulators (one with summary card punch attachment), two sorters, and an automatic verifier.

Work performed by these machines includes payroll, income tax records, superannuation records, labour analysis, stores accounting, invoice analysis, traffic time records, ticket stock control, fuel and oil records, daily and weekly mileage, and miscellaneous accounting and statistical work. Advantage has been taken of the flexibility of the system to make various changes which provide information not previously available.

In view of the very large number of jobs for which punched cards are used by the undertaking, this article will be confined to certain applications concerned specifically with the maintenance and operation of vehicles.

The basic information required for costing and statistical analysis of maintenance is provided by job cards and stores issue cards. Like

many of the other punched cards used by the undertaking, these are dual-purpose.

All men employed in the works and depots record details of their work on green job cards, one of which is used for each job. Particulars recorded include the clock number, the vehicle number, a works number denoting the nature of the work that has been carried out, and a second code number which identifies the depot at which the job was done.

The two main purposes of these records are to balance the number of job cards against wages paid and to determine the labour costs of individual jobs. For the first purpose, they are reconciled with the workman's gross wages, which are also recorded on dual-purpose cards.

At the end of the week, the

cards are punched in the clock number columns and sorted in that order to assist the clerks who value them. The whole of the information written on them is then punched and verified on the same cards.

After one girl has punched the information, it is checked by a second operator who offsets her machine slightly and makes the original round hole into an oval hole. The cards are then put through the verifier and cards with holes which are not oval are rejected, a red card being intermingled with the pack to serve as a marker.

After they have been verified, the cards are sorted to yield whatever information is desired. Formerly, sorting was performed at the rate of 24,000 cards per hour, but a second sorter capable

of sorting 40,000 cards per hour has recently been installed.

The system of coding allows repair and maintenance jobs to be classified under any desired number of headings, according to the type of work and class of vehicle. It also distinguishes between running repairs (carried out during the day or overnight at depots where vehicles are housed) and scheduled maintenance (which takes place at intervals of so many thousand miles). Thus the works number 6 denotes chassis repairs to motor buses, 106 chassis repairs to trolley buses, and 206 expenditure applicable to chassis repairs on both classes of vehicle. A "2" in place of the "6" would refer to body work. Each garage and depot has its own code number.

For costing purposes, the job cards can therefore be used to produce labour costs for individual vehicles, classes of vehicles, types of jobs, depots, etc. For example, the total number of man-hours spent on chassis repairs to motor buses in a given period at a certain depot can quickly be ascertained.

Punched cards and tabulations

now serve as stores ledgers and have completely replaced the conventional book or card forms previously used for stores accounting. Cards are punched from the original "goods received sheets" and "returned to supplier" notes, after checking against the order and supplier's invoice. Each item of stores has a numbered code corresponding to the bin number. Quantities are entered in units, and every supplier is given a number which coincides with the official order file number. Debit and credit cards are punched from stores transfer notes.

Issue Procedure

The same design of card is used for stores receipts, returns to supplier, stores transfers and store balances, each category being denoted by the colour and the "type of card" hole. Pre-lists of the original records are prepared monthly and agreed with a listed tabulation of the appropriate cards.

Consecutively numbered dual-purpose cards are used for stores

issues. Each issue is recorded on a separate card. The foreman requiring material (or his assistant) enters on the card the material required, date, vehicle number, and works number. When the material has been issued, the card is signed and entered on the bin card by the stores clerk, who records the bin number and quantity, issued in units which are clearly stated on the bin card. Materials issued in excess of requirements are returned to stores on a stores debit note from which a stores (debit) card is punched.

The stores issue cards are credit cards and record two essential items of information: (a) the account which is to be debited with the expenditure and (b) the bin which is to be credited. They are first sorted into bin number sequence and then transferred to the costing department to be valued. The price is added by cost clerks and the value is calculated by comptometers. The cards are then sorted into works number sequence and a "totals only" tabulation is prepared. Finally, each works number is posted to the debit of the appro-

International Superelectric Master Clock Time Systems



provide

● ACCURACY

ensured from the Master Clock which is electrically driven and not affected by power failures

● UNIFORMITY

of all units controlled by the Master Clock, which sends out impulses each minute. These are re-inforced by hourly Automatic Supervision—an exclusive feature of the International System

● VARIETY

Any number of units—Time Recorders, Secondary Clocks, Time Signalling and Indicating units may be included on the circuit

For further information ask for booklet J564/2 "On Time" which will be sent without cost or obligation

IBM UNITED KINGDOM LTD.

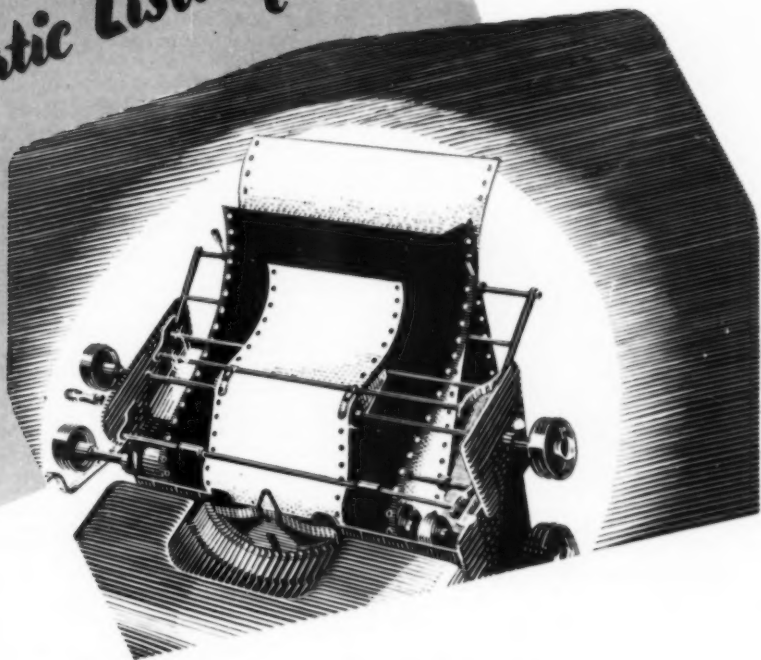
formerly trading as

INTERNATIONAL TIME RECORDING CO., LTD.,
8 BERKELEY SQUARE, LONDON, W.1.: MAYfair 2004

and at Birmingham, Manchester, Leeds, and Glasgow

HEAD OFFICES: INTERNATIONAL WORKS, BEAVER LANE, W.6

Automatic Listing!



New Dual Feed Cuts Routine Typing by Half

Here is the most impressive development in typing for many years—the Alacra Dual Feed. Where previously invoices, cheques, receipts, payslips and so on were typed in one operation and summarised separately to form a journal, payroll, paying-in-slips etc., the two jobs can now be done *in one operation*—continuously—with a 50% saving in time, labour and costs—and with no possibility of copying errors.

Almost any model of typewriter, manual or electric, can be fitted with this Dual Feed attachment which is simple and trouble-free to operate.

Furthermore, the attachment incorporates the unique Alacra frictionless feed which means that multi-part sets can be used with guaranteed accurate register and automatic alignment.

Every typewriter user should know of this important new technique It will vastly increase the scope and productivity of your typists.

Send *now* to the following address for full details without obligation.

W. H. SMITH & SON, LTD.,
6, ALLIANCE ROAD, WESTERN AVE., LONDON, W.3.

ALACRA

CONTINUOUS BUSINESS FORMS
AND FORM-FEEDING DEVICES



prorate account and the grand total to the credit of the stores control account.

Stores are balanced at intervals of three months. Receipts, returns to supplier, transfers, stores issues and returns cards for the period are merged with the previous balance cards and sorted into bin number sequence. The tabulator produces an automatic balance in quantity and value for each bin. The tabulations and card trays are taken to the stores, the quantity balances are compared with the bin card balances, and any disagreement is investigated.

Stock Check

The grand total of the tabulated balances is posted to the credit of the stores control account and the latter is balanced in quantity and value. Formerly, new balance cards were punched for the next accounting period, but this operation has been eliminated by the installation of a summary card punch for use in conjunction with the tabulator.

The card showing the commencing stock passes through the tabu-

lator, followed by receipt cards (which are added) and issue cards (which are deducted). The figure produced on the tabulator thus represents the balance of stock at the end of the period. The summary card punch then automatically punches into a stores balance card a figure which is the actual stock position at the beginning of the next accounting period.

Like the job cards, the stores issue cards can also be used to find the costs for individual vehicles, classes of vehicle, special jobs, or types of work.

At the present time, the department is in transition between two different systems for analyzing maintenance and repairs. Until recently, these were broken down into a considerable number of components, each with its own works number. As an example of the type of information obtained, records show that in August, 1951, £174 was spent on materials for the back axle, back wheels and transmission of motor buses, the cost per mile being 0.6d. In August, 1950, the corresponding figures were £101 and 0.037d. During the five months

April to August, 1951, £1,131 was spent on materials in this category, the cost per mile being 0.078d., against £1,186 in 1950 costing 0.082d. per mile.

No Time-lag

These records enabled a very rigid check on maintenance costs to be kept. For example, if repairs to brakes showed a substantial increase in any particular month, the maintenance engineer would investigate the cause. He might find that a particular type of brake lining was unsatisfactory. In the absence of a punched card system, a considerable period might well have elapsed before this information became available and meanwhile further orders might have been placed for linings of the unsatisfactory type.

Up-to-date information on operating costs is afforded by cards which accompany each vehicle and record the journeys, mileage, fuel and oil supplied, etc. Vehicle statistics cards are punched daily from these record cards and the vehicle number and mileage are

For the reproduction
of anything
that can be written
drawn or typed,
you need an

Collams
D.100
Duplicator

guaranteed for 10
years with the
automatic copy -
controlled Inking
System

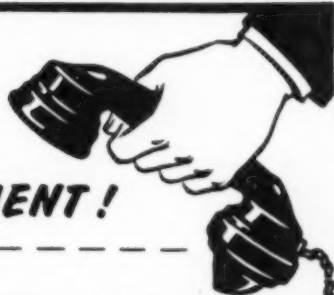
Full details from

ELLAMS DUPLICATOR COMPANY LIMITED
5 DEAN STREET, LONDON, W 1

*patented throughout the World

GERARD 4556

ONE CALL FOR ALL OFFICE EQUIPMENT!



A COMPLETE SERVICE of new and rebuilt typewriters, accounting, adding and calculating machines, office and factory furniture, and office accessories. We are fully qualified office mechanisation consultants—give free instruction with all machines, and offer an unparalleled after-sales service. Illustrated below are a few articles from our comprehensive range of office equipment. We shall be pleased to have your enquiries.

WHATEVER YOU ORDER YOU ARE

SURE TO RECEIVE . . .

- ★ RELIABLE SERVICE
- ★ SPEEDY DELIVERY
- ★ COMPETITIVE PRICES



FILING CABINETS. We include these cabinets in a selected range of fine office furniture from elegant desks to occupational seating.

FREE!

**PLAN
YOUR
OFFICES
WITH THIS
UNIQUE
OUTFIT**



To ensure your offices are economically and attractively planned, borrow our Visual Planning Outfit to make the fullest use of available office space. The outfit consists of scale models of desks, cabinets, cupboards, etc. In a matter of minutes, different ideas can be put to the test. By trial and error the most suitable layout can be determined—without effort or inconvenience. We shall be happy to loan one of these outfits to you without charge.

**EXECUTIVE'S
DESK.** Many other types of desks illustrated in our catalogue.



Accredited dealers for new "Burroughs", "Olivetti" and "Victor" adding, subtracting and listing machines.

New "Hamann", "Olivetti", "Original Odhner", "Everest" and "Antares" Calculators of various capacities to suit every known need.

Rebuilt "National", "Burroughs" and "Remington" Accounting Machines.



ADLER. Latest design in office typewriter construction. We also stock new "Siemags", "Bluebirds", Remington Master-Riters, "Olivers", "Byrons". Leaflets sent on request. Rebuilt Royals, Imperials, Underwoods, etc. All new portables also stocked.

TYPEWRITERS LIMITED

Head Office and Showrooms: 26 Holborn Viaduct E.C.1.
Branch Office and Showrooms: 109 Southampton Row, London, W.C.1

**CENtral
1212/3**

tabulated for use in the engineering section.

Once a week, the cards are sorted in vehicle number sequence and a weekly mileage, fuel and oil summary is recorded. Tyres are hired from three manufacturers on a mileage basis. A number representing one of these manufacturers is therefore recorded on a master card for each vehicle. For motor buses, a second code number denotes the type and make of engine. The master cards are merged with the mileage cards when the weekly tabulation is prepared and a summary card is punched for each vehicle. The accumulated mileage of each vehicle is also recorded and tabulated weekly and this information is used for the maintenance programme.

Fault Spotting

At the end of every four or five weeks, the summary cards are sorted by vehicle number and tyre manufacturer's code to provide the periodic tyre mileage returns. They are then re-sorted into type and make of engine, and fuel and

lubricating oil consumption for the period is tabulated. The averages are calculated by the calculating machine operators. If the returns indicate that the fuel or oil consumption of a particular vehicle is tending to increase, immediate steps can be taken by the maintenance engineers to trace and rectify the fault.

Similar methods are used to provide accident records and statistics which were unobtainable before the installation of punched card equipment. The claims section completes a dual-purpose accidents statistics card for every reported third party or employee's accident. Types and classes of accident, light, weather and claims lodged, are coded and printed on the cards, the appropriate code number being crossed out. Other information such as the time of day, service number, employee involved, number injured, etc., is written in the printed columns on the cards.

Yet another application of punched cards is the ticket system. The tickets issued to each conductor are recorded and the conductor

is credited with the tickets he sells. The balance is produced by the tabulator and compared with the stock of tickets in the conductor's box.

Labour Saving

The saving in labour, is of course, enormous. Formerly stores ledger clerks had to post every stores issue, which would involve about 150,000 postings a year. All this work is now done by machine.

The installation of punched card equipment has overcome the difficulty of obtaining clerical staff to cope with the tremendous amount of book-keeping which would otherwise be required by the increasing complexity of wage agreements. It has enabled the management to take in its stride all the additional accounting involved in the expansion of the undertaking since the war. The number of passengers carried has risen from 142,198,000 in 1945 to 173,961,000 in the year ended March 31, 1952, and in the same period the mileage covered has increased approximately in proportion.

BRACED

for any struggle!



Packages packed
this way are **SAFE**

LOOK GOOD COST LESS

TRANSOTAPING

(just run your finger along the tape)

TAPES THE STRESS

Let us send you a sample roll to try



JOHN GOSHERON & CO LTD
GAYFORD ROAD LONDON W12
TELEPHONE SNE 3326

Gosheron for TAPES

"YOU CAN NOW SEE
 INTO OUR NEW OFFICES.
 ALL THE
FILING CABINETS
 ARE **STEEL** -BY
Sankey-Sheldon

OF COURSE"



SANKEY-SHELDON LIMITED
 46 Cannon Street, London, E.C.4 CITY 4477 (ten lines)

NEW TAX ALLOWANCES

on Your Plant & Machinery

Stop Press Record Simplifies Tax Claims

Once again industry can claim Tax Allowances on capital equipment.

It is now therefore more essential than ever to maintain a comprehensive yet simple Plant Register—especially if maximum advantage is to be taken of the renewed concessions.

A new *visible* record has just been specially designed to meet this need.

It provides for visual identification of each item of equipment. It gives makers' name, place of purchase, number, whether new or second-hand, the insuring company, policy number, etc. It provides for a full description of each item, its exact location, costs (from first cost to final installation). It has columns for depreciations, tax credits, balance sheet values, tax assessments, repairs, etc., etc. In short, it gives a technical and financial history of every item of equipment, etc. It provides, **VISUALLY**, an instantaneous record of every item of data concerning every item of equipment.

One compact book will house hundreds of such records—and in such a way as to afford immediate reference and a minimum of clerical maintenance.

Just write "Maintenance Record" on your letterheading, and details will be sent you by return.

Shannon Systems

FIRST IN FILING

The Shannon Ltd.

95 Shannon Corner • New Malden • Surrey

HOW INCENTIVES RAISED DEALER'S TURNOVER

Continued from page 63

are available a few days after the end of the month. Figures are posted immediately, and bonus paid on the first pay day after the end of the month.

The pundits would argue that the incentive effect of the bonus is mitigated by its distribution among a number of workers. Hollingdrake have not found this to be the case.

One reason may be that the groups are comparatively small; the simplicity of the calculations involved makes possible the rapid establishment of a comparatively large number of bonus rates. A significant sidelight on this aspect is that one small group, consisting of two men and a boy, applied for a bonus rate of their own, on the grounds that they could do better so than by remaining a section of a larger group.

At the moment, there are nine groups with their own bonus rates—four departments at head office and five subsidiaries and branches.

The bonus is paid to all employees who are not covered by other bonus arrangements. The main exception is car salesmen, who receive a direct commission on sales. Some 17 senior executives also receive a direct bonus once or twice a year. Formerly, this was a lump sum, the size of which was determined at the discretion of the board. Now it is a fixed percentage of gross profits.

After two years' operation, the scheme can be described as a success all round. The workers are happy—they have received over £2,500 in bonus during this period, with monthly bonus rates varying from 0 to 12½ per cent. of their basic wages. Experience has shown a fairly wide fluctuation from month to month, and this has prevented the all-too-frequent acceptance of a bonus as a flat increase.

Management, too, are happy. Turnover has gone up and, in spite of the drain of bonus payments, the percentage of net profits has steadily increased. This expansion has occurred without any addition to staff. On one occasion, a manager decided to take on additional staff for his

department which had been expanding rapidly. The existing staff, with an eye on their bonus, protested and claimed that they could cope with the additional work. They were given the chance—and did.

The testing time for the scheme, however, came in the autumn of 1952. Sales of the whole motor industry slumped; and those of Hollingdrake proved no exception to the rule. As a result, bonuses declined and even disappeared.

The workers, understandably, grumbled. But, with the economic facts of life presented to them month by month on the notice-board, they bore no grudge against the management for the loss of bonus. Many incidents gave proof that a firm team spirit had been built up. There was, for instance, a significant increase in the number of suggestions received by the firm's suggestion scheme committee.

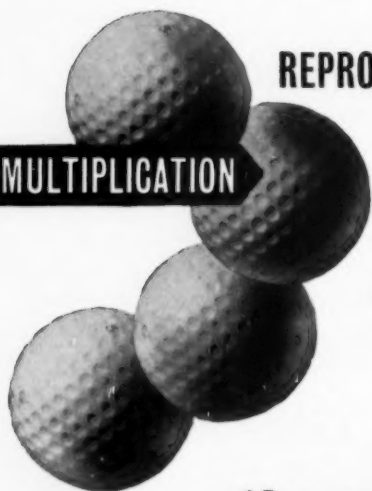
To-day, Hollingdrake have weathered the storm, and progress has been resumed. It was not, perhaps, a particularly serious storm, but its impact was sufficient to prove that the vessel was seaworthy.

ENLARGEMENT

REDUCTION

REPRODUCTION

MULTIPLICATION



WHEN A FACSIMILE copy of a document is needed—

or a number of copies; when photoprints are required—quickly;

when a litho plate is wanted for the "office offset";

when illustrations have to be scaled down

—or up; then there in its modest corner

of your office is your Mervac,

waiting like the barman

at the nineteenth hole to supply

what you can do with.

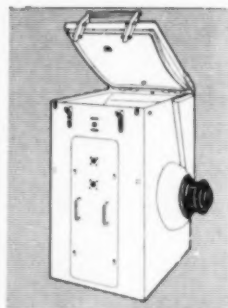
We can tell you which particular

Mervac model will be best for

your own work. Grant Production Co. Ltd.,

4 Rathbone Place, London, W.1.

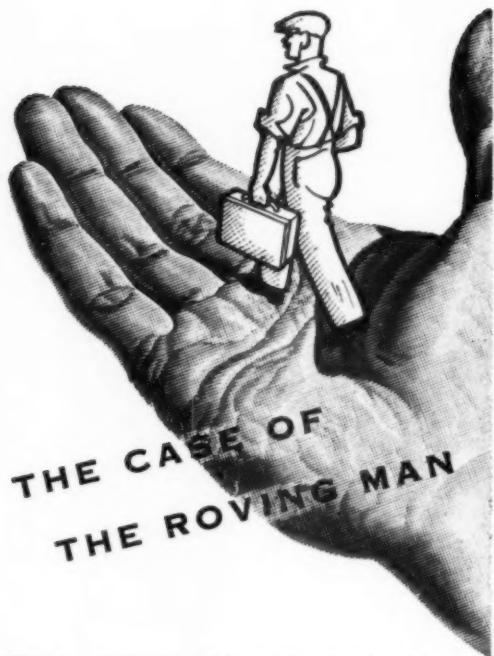
(Museum 8717).



Little larger than a filing cabinet, easier to work than a typewriter. This is the Mervac Copier, the most compact member of the Mervac team—and it never fluffs a shot.

the versatile

MERVAC



Every employer knows this kind of man, maybe knows his family too. Hard working, keen and loyal at heart he wants to stay on at 'the works' but loyalty does begin at home. Give him the extra security he's looking for, and deserves.

Invest, for that is what it is, in a Hobbs Savill 'individually planned' Retirement Benefit Scheme. The right kind of craftsman will come to stay, bringing with him higher output and greatly reduced labour turnover. It could cost you as little as 1d. per working hour.

Send for "As Personal as your own Handwriting" our booklet that tells you all about the H.S. system.

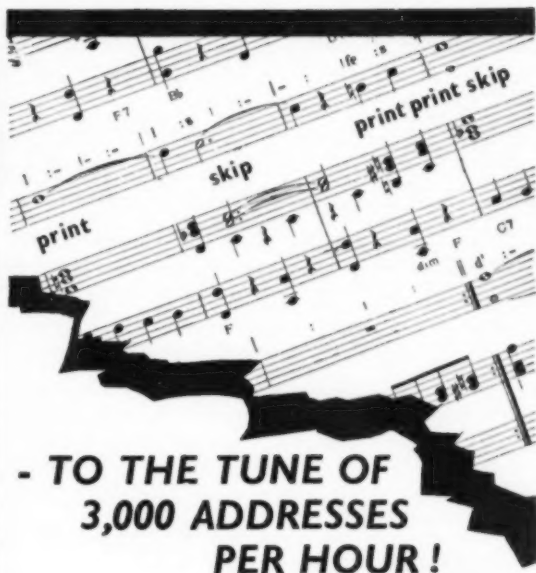


HOBBS SAVILL (LIFE & PENSIONS) LTD.

37-39, LIME STREET, LONDON, E.C.3

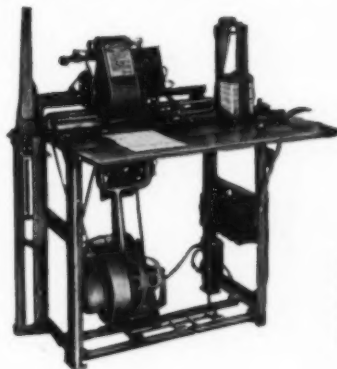
Telephone: MANston House 7855

Telegraphic Address: Livelier, Stock, London



With the AUTOMATIC SELECTOR/REJECTOR attachment, the "Addressall" will select and address any given name classifications or combinations of same, from a general list, whilst automatically skipping others, and without dis-

turbing the sequence of any stencil in the file. With the SHEET FEED attachment, the "Addressall" will automatically list names, numbers, or other data in a continuous column form on pay sheets, etc., etc.



These are but two of the many advantages to be gained by installing the "Addressall"—the answer to every known name or data writing problem!

Addressall MACHINE COMPANY

11-13 SOUTHAMPTON ROW, LONDON, W.C.
Telephone: HOLborn 3571-3572

★ WILL REPEAT, SKIP, DUPLICATE OR TRIPLICATE ANY DESIRED ADDRESS AT WILL!

*We've solved
an essential
welfare problem—*

*the hygienic and rapid disposal of used
sanitary wear and surgical dressings.*

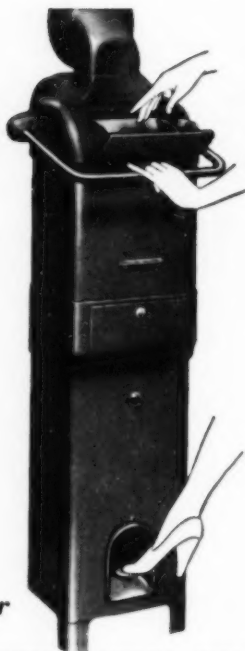
- ✓ Perfectly safe and simple to operate—the G.E.C. sanitary incinerator is entirely automatic
- ✓ Pressure on foot lever opens receptacle for discarded material which is rapidly reduced to ashes
- ✓ Robustly built and attractive in appearance
- ✓ Fully guaranteed for 12 months

Fully descriptive leaflet available on request

G.E.C.

electric SANITARY incinerator

THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2



Overalls FOR ALL TRADES & PURPOSES

BOILER SUITS



**BIB & BRACE
OVERALLS**



**APRONS, etc.,
for MEN and
WOMEN,
COATS,
JACKETS.**



The
"VOLE"
Brand

RIGMEL SHRUNK

Write for PRICES and PATTERNS

H. WHEELER & COMPANY LTD.

107 London Road, Plaistow, London, E.13

Phone : GRAngeWood 4071 (5 lines)



Automatic SANITARY TOWEL MACHINES

**Essential Welfare Equipment
in every modern**

**FACTORY
OFFICE BUILDING
LAUNDRY etc.**

where women are employed

The machine illustrated is our ST/18/3 which dispenses the "LILIA" well-known brand of Soluble Towel. Finishes are White, Cream, Green, etc., or French polished. Strongly built. Price £6. 10. 0. Twelve months guarantee.

Can be supplied with our new "Simplomatic" fitment which enables the mechanism to be altered to operate at either 1d, 2d, 3d or 4d, in a matter of sixty seconds.

The towels, which are individually packed in cartons with 2 safety pins, are obtainable direct from us and show a clear profit of 22½% on sales.

Write for particular or call and inspect our latest models
LAMBART & SMYTH LTD.

40, SLOANE STREET, LONDON, S.W.1.

Tel: SLOane 7629.

Sixty men and women, average age over 70, are employed at a municipally-organized "factory" in Finsbury. Quality of their work is good; all is sold in the open market. The scheme has provided experience which can usefully be applied to industry's pressing problem of employing the over-60s.

This 'Factory' for Over-60s Helps Local Industry

THE case for employing elderly workers is strong; the political, economic and business part of it was stated in last month's issue of this journal. But what of the old people themselves? What are their physiological, psychological and spiritual needs? Can they be met by employment as such or is this merely a denial of the right to well earned leisure? These are important questions and their final answer could affect the finance, taxation, employment and redundancy policies of every business in the country.

Basic technical problems connected with bodily and mental health are outside the competence of businessmen and one has to turn to expert witnesses. As yet the evidence which they can provide is probably insufficient for management to make any far-reaching decisions, but their experience may be a guide to action in a situation which demands the employment of an increasing proportion of workers hitherto regarded as ripe for retirement. The general background to this situation was outlined in *BUSINESS* last month and an account was given of a brave experiment by one industrial concern—Rubery, Owen and Co., Ltd.

A further case history is now available which points the way to hopeful possibilities of action by industry. Moreover, the methods employed and observations of the results obtained have the authority of someone whose neutrality and expert knowledge is unquestioned—the local medical officer of health.

The story is one of community effort and the setting is Finsbury.

where an attempt has been made to find productive employment for a few of the old folk of the district. Many of these people live in single rooms and straitened circumstances.

Unable to work, they were entirely dependent on pensions,

By
PATRICK GORDON

public assistance or the contributions of relatives. Inactivity and inability to support themselves made them feel unhappy and unwanted. Hands, minds and spirits lost their vitality for want of help and stimulation.

The basic responsibility of medicine is to prolong life by cur-

ing a man of his ailments, but Finsbury's medical officer of health, Dr. C. O. S. Blyth Brooke, believes that his profession—or at any rate, that part of it which is concerned with public health—must assume a further responsibility. For he argues that the prolongation of life has little purpose if man is to suffer "a lonesome rotting, unwanted by his fellows." And he concludes: "As the physician strives to prolong life, so ought the public health officer strive to protect life from all circumstances which contribute to its decay."

He, his borough council and the Employment Fellowship set about the problem by finding an organizer who had experience of training disabled workers and selling their products in the open market. To her, Dr. Blyth Brooke explained his ideas about the need and importance of finding productive employment for old people. This, he said, would be a positive approach towards improving the health of the old people and the economic conditions in which they lived.

Using Finsbury Health Centre as a temporary headquarters, the organizer made contact with local voluntary associations, visited old



IN PRODUCTION—Work goes steadily ahead in this corner of the "factory" for over-60s. Women at the nearer table are packing corn pads

people's clubs, explained the scheme and recruited six likely candidates. She then went in search of work and began training her diminutive labour force.

The next stage was the renting of premises. These were found in St. John's Street, Finsbury; rather dingy premises, inconveniently situated on three separate floors, but cheap enough to be practical. The "firm" moved in, and from then on the experiment became its own advertisement as far as the old people were concerned. More and more wanted to join and today there are over 60 men and women on the payroll. The youngest of these is 61 and the oldest is 85. The average age of the men is 72, whilst that of the women is 70.



ONE BENCH, TWO JOBS—Rug-making on the left, more outwork on the right

The growth in the number of old people added to the problem of finding work, and this the organizer solved in two ways: first, by cultivating and adding to the list of firms that were willing to provide outwork; secondly by developing original production and selling it direct to the public and to shops and big stores.

The operations carried out in St. John's Street can now be listed (incompletely) under two headings, and this tabulation is evidence of the versatility of the workers and the variety of simple manufacturing processes that could be introduced by firms willing to make their own experiments.

I Outwork: Filling sales envelopes with corn pads and notes of instruction. Threading, eyeletting and finishing finger stalls. Filling, weighing and sealing cartons of animal wool. Machining

and threading sponge bags. Assembling and packing bottles with screw top eye-droppers. Padding, binding and stringing vaccination shields. Assembling elements for electric irons. Testing ball point pen refills. Stringing meter cards. Collating printers' supplies. Transferring information from old public library index cards to new cards. Manufacture of bunting.

2 Own Manufacture: Padding and covering coat hangers. Cutting out and making up aprons. Cutting out and making nightdresses. Manufacture of toy animals for Christmas trade. All these products are sold in the open market at prevailing prices. No under-cutting is allowed and although most of the old people had to be

found themselves able to take ordinary jobs.

Dr. Blyth Brooke goes so far as to say that the scheme has already proved conclusively that physical and psychological benefit can be derived by older persons from continued service in industry. The condition is that circumstances of employment should be adapted to meet reduced capacity.

In a speech at a recent conference of the Royal Sanitary Institute, he said:

"Further schemes such as the one I have described are, I think, called for, and the money spent on them will be more than balanced by the saving on health and welfare services for institutional and domiciliary care and, in addition, a contribution will be made, however small, to the labour resources of the country.

"But they can never by themselves provide employment for all our ageing population. Industry must play its part in assimilating these persons into its fold. Difficulties due to the employment of half-time or half-speed workers must be overcome and financial burdens must be carried."

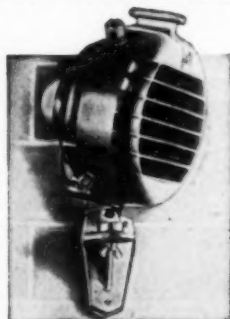
Wages and Costs

Lastly, a word about expenses. The Finsbury scheme costs about £1,200 a year, most of which goes in rent and the salary of the organizer. The equipment is very simple indeed, though it includes two electric sewing machines and two or three easily-operated mechanical devices lent by firms for work under sub-contract. The old people are paid slightly more than they earn, but since this is a non-profit making venture the aim would be to give them more as soon as costs could be reduced.

In the case of an experiment by a private enterprise, there seems every hope that the old people could, in fact, cover their own wages since they would begin with knowledge of and training in the work they were given to do. Meanwhile, the Finsbury organizers feel that their experience justifies them in looking out for a larger building which will enable them to double the labour force. For old people are numerous in Finsbury, as indeed they are in most parts of the country, and they are ready and willing to work.

EFFICIENT Heating

FOR OFFICES, SHOPS, CANTEENS, ETC.



THE 'SPIRALUXE'

This modern Heating Unit provides comfortable warmth rapidly, and is ideal for offices, board rooms, canteens, etc. Motor driven fan—ensures even heating throughout the room and eliminates cold spots. The 'SPIRALUXE' is smartly designed, sturdily constructed. Available for operation from own steam supply or by electricity (2 or 3-kw). Guaranteed for 18 months. Write for descriptive list.

STOP PRESS!
DELIVERIES EX STOCK
BY RETURN.

SPIRAL TUBE
Unit Heaters

SPIRAL TUBE & COMPONENTS CO., LTD.
OSMASTON PARK ROAD, DERBY. Tel.: DERBY 48761 (3 lines)
Head Office: Honeypot Lane, Stanmore, Middlesex.

STRIKINGLY
ATTRACTIVE

REASONABLY
PRICED

EFFICIENT



The Finest Edition of the New Flexible
ALUMINIUM VENETIAN BLIND

Streamlined, All Metal, in Many Colours for Offices and Factories

Just pin this to your notepaper, for a sample slat.

"Britain's Leading Blindmakers"

J. AVERY & CO., (Est. 1834) LTD.

81, GREAT PORTLAND STREET, LONDON, W.1. Museum 9237
JULY, 1953

KWICK-DRY PAPER TOWELS

Dispensed from

**AUTOMATIC CABINET
CONTROLS Waste!**



*Cuts Towel
your Costs*
50%

**and is cheapest in the long run!
IN OFFICE, FACTORY and CANTEN**

These **BETTER** quality towels: **REALLY DRY** and are cheapest in the long run because, released **ONE AT A PULL** from the cabinet there is **NO WASTE**.

KWICK-DRY PAPER TOWELS

- ★ Cut your towel losses.
- ★ Cut your Laundry Bills.
- ★ Cut time-waste.
- ★ Offer a fresh, cream shade towel for every occasion.
- ★ Remove infection dangers of the old communal towel.
- ★ Are stronger wet than dry and do not disintegrate.
- ★ Conform to 1937 Factory Act.

CUT COSTS—BE MODERN
install

KWICK-DRY de luxe CABINETS

KWICK-DRY TOWELS are also supplied flat-interfolded in packets.
Full details on application to Towel Dept.

Freder Brothers Paper Mills
BRIMSDOWN, ENFIELD, MIDDLESEX
Telephone: HOWard 1847 (5 lines) Grams: Sylkocrepe, Enfield

Café Set

by

Bartlett

LOOK FOR
THE NAMEPLATE



Incorporating the very latest
Coffee-Making technique

G. F. E. BARTLETT & SON LTD

BELL STREET, LONDON, N.W. 1. ENGLAND Telephone PADDINGTON 8222

BIRMINGHAM: 12, Whitmore Road. Tel. Victoria 1615 MANCHESTER: 530, Stretford Road. Tel. Trafford Park 0287

Policy Column

DIRTY WORK IN THE SCULLERY

Hygiene has become the accepted word for cleanliness. Phrases like: "How are we on hygiene?" are used instead of: "Is our canteen clean?"

Hygiene is the aspect of cleanliness which directly concerns the health of those who eat food prepared in the canteen from vessels washed in it. It could be described as the creation of a barrier of safety between bacteria and customer, or breaking the chain of infection, or the prevention of multiplication of bacteria into dangerous colonies. Or all three.

But you cannot have hygiene without cleanliness and you cannot have cleanliness without good maintenance of all surfaces. These require healthy well-trained canteen personnel and hard, unremitting work.

A cracked and dirty table may be rendered sterile by the application of chemicals. But in practice it is far safer to have a sound table of impervious surface scrubbed to visible, undeniable cleanliness, and then, if you wish, wipe over with a sterilizing agent.

A cloth that is used to wipe a counter will be safer if it is wrung out of water containing a hypochlorite solution, but that cloth ought to look clean as well as sterile.

Dirty workers are less dangerous if every trick of science is used to keep their hands, clothing and the surfaces they touch perfectly sterile. But some would prefer to put their first trust in workers who are trained to be clean.

The practice of hygiene is admirable—but it must not replace the old-fashioned cult of soap-and-water cleanliness.

Where a kitchen looks and smells clean; where workers have clean caps and clean overalls, clean hands and clean habits; where walls and ceilings, tables, benches and shelves are sparklingly clean—there hygiene really begins.

The condition of an operating theatre is the ultimate achievement of the practice of hygiene. But whoever heard of an operating theatre that is not as clean as soap and water and rubbing and scrubbing can make it?

How Much is Your Canteen Staff Worth?

By WINIFRED McCULLOUGH

Senior Canteen Advisor, Industrial Welfare Society

"Productivity" of the canteen cannot be measured exactly; neither, therefore, can the effect upon it of wage rates. But there is sufficient evidence to show that in the canteen, as elsewhere, good wages and working conditions pay their way in terms of greater efficiency. Current experience of canteen wage policies is examined in this article.

THE canteen wages board sets minimum rates for canteen assistants, cooks and supervisors, but they are a good deal lower than those paid in most parts of the country. Rates are highest in London, Birmingham and Wolverhampton. They are down to trade board level in parts of Tyne-side and in some Scottish districts.

It is still true to say, however, that most industrial concerns find it necessary to relate their canteen wages to the basic rates paid in the factory. Indeed, this almost always happens where women are employed on the production side. Many firms also regard equal pay for women in the canteen and the factory as a simple matter of fair dealing. In addition, very many firms take into account the food consumed on duty by canteen staff, and pay them the basic factory rate less 8s. to 14s. weekly to allow for this.

Variations in wages and their effect on canteen labour costs were subjects for discussion at a recent meeting of managers of large canteens in and around London. On close comparison of figures it was found that higher hourly rates for canteen workers did not necessarily mean a higher labour bill. Among the reasons were the following:

(a) In factories where high rates are paid to canteen assistants, high rates apply throughout

the factory and higher canteen prices can be obtained.

(b) High rates enable a really good type of worker to be chosen for the canteen.

(c) High rates mean that workers stay longer and draw together in a team.

(d) High rates attract younger workers whose strength and speed is greater than that of older women.

(e) High rates make the canteen worker feel more the equal of the canteen customer. This helps morale, and work improves.

Some of these reasons are wholly valid and all of them partly so. Higher rates of pay nearly always mean fewer assistants and a better, smoother job.

One firm in a heavily industrialised home-counties town pays a minimum of £4 12s. 0d. for a 44-hour week to canteen assistants. Cooks, supervisors, etc., are paid proportionately, and the manager is highly qualified and very efficient. There is practically no labour turnover and absenteeism is unknown in the real sense of the word. Staff are conscientiously trained and promoted whenever possible.

Another firm in London's outer suburbs pays £5 for canteen assistants, but they, in turn, pay for their honour to do this and state at the end of each day what is to be charged against them. In two years very few abuses have been

experienced, and these have been reported by other workers. Here again the manager, supervisors, chefs, etc., are of a high standard and are proud of their canteen and their firm. Prices charged in the canteen are not high, yet the labour cost is a smaller percentage of turnover than that of many firms paying far lower rates.

Keeping Staff

In the heart of London, where there are no dwelling houses nearby to supply female workers, a canteen pays a £4 7s. 6d. minimum for a 44-hour week. There is no difficulty about keeping staff and none in selecting suitable recruits for vacancies. Well-designed cloak rooms, rest-room and other amenities have helped to give the canteen a deserved reputation as "a good place to work." Here again the labour cost is a reasonable percentage of turnover.

The lesson should be obvious to every caterer. A team of four people, trained to work together, accustomed to each other, and secure in the atmosphere of a well-organized, well-disciplined organization, will do as much work as six people who are uncoordinated.

Workers who stay for two, three, 10 or 20 years are worth training. They in turn will train newcomers and help them to see quickly and clearly that this is a place where responsible people behave in a sensible way.

It is not suggested that the way to end all canteen troubles is to pay higher wages. But it is argued—and argued very strongly—that the lowest rate of hourly pay does not mean the lowest actual labour cost.

Good Supervision

It can hardly be denied that the greatest single attraction to good staff is a good wage. But if the basic wage is fair, it is worth considering the other factors that attract and hold good workers. For there are ways and means of turning not-so-good workers into life-long treasures.

First and foremost is good supervision—which leads inevitably to a discussion of the salaries necessary to secure good managers, and of the cost (expressed as a percentage of turnover) of good supervision.

Managers and manageresses of

industrial canteens can be divided into two categories:

1.—The working manager who cooks, or supervises the counter, or looks after the stores, or takes the money, or does a little of all these as well as managing the canteen.

2.—The manager or manageress, catering manager or canteen supervisor who is solely concerned with management.

The manager in the first category operates in a canteen serving up to about 400 main meals daily. Only a proportion of his salary can correctly be charged to supervision because much of his day is spent in actual work.

Those in the second category are engaged in organizing administering and supervising the preparation of 500 meals and upwards, and their job is purely supervisory. As numbers increase, they may even require help with the supervision. This would be obtained by employing an assistant, dining room supervisor, clerk, etc.

Salaries in both categories vary enormously. There is one cook/manageress who copes, single handed as far as supervision is concerned, with 450 dinners a day,

1,500 snacks, 2,000 beverages and a night shift and is paid £7 10s. 0d. a week. Elsewhere a similar job is done by a manageress who is paid £850 a year and an assistant who is paid £500.

On the average, a manageress earns £100 yearly for every hundred dinners a day over 300. This progression stops dead somewhere about £800 and does not move again until the number of dinners per day reaches 2,000.

Men do not usually manage the smaller jobs, but a chef in charge of 100 dinners gets about £8 0s. 0d. weekly and a manager generally earns between £100 and £250 per annum more than a manageress in the same type of job.

A good manager or manageress can save hundreds a year by good buying, good organization, economy in the use of materials. Obviously he or she is worth more than the mediocre or poor manager.

Expressed as a percentage of turnover, supervision seems to cost between 5 and 12 per cent. in firms paying reasonably good wages. The variation is caused by the higher cost of supervising shift work, scattered premises and jobs with several dining rooms of different grades.

Check List for Summer Pests

THE pest season is upon us. Kitchens, guiltless in cooler weather, break out in August and September with one or more of six plagues: cockroaches, ants, flies, blowflies, silver-fish, and weevils. Now is the time to take steps to keep out these pests or stamp out those already in residence. Do it before they increase and multiply. Study this check list:

Cockroaches

Search in corners of food cupboards, angles of walls, door jambs, etc., for accumulation of "rice-like" eggs. Other suspect places are pipes and under sinks. Cockroaches do not like the light and their presence can often be detected only by switching on the electric light suddenly during the hours of darkness. Pyrethrum will cause them to rush out, when powder puffed into their crevices they can be destroyed.

Ants

The black ant (which is really dark brown in colour) normally nests outside in the soil or under paving stones. He enters under doors, through window frames or through defects in walls. The other

species, which is smaller and brownish-yellow in colour, nests inside close to sources of warmth. Track down and destroy the nest of the indoor ant. Detect the trail and block the entrance of the outdoor variety.

Flies, Blowflies

These insects cannot really be controlled unless their breeding places are discovered and cleaned out. Normal insecticides that kill flies in the kitchen sometimes cause dead insects to drop into food. All places where flies can breed, such as dust bins, rubbish dumps, pig bins, etc., should be thoroughly cleansed now and supplied with well-fitting covers so that flies cannot reach their contents. Flies that enter a kitchen from breeding places in other pre-

BUSINESS



Overall Opinion...

"They've tried a few tops on these tables, one time or another!"

"I reckon this plastic stuff beats the lot though."

"What's it called, Jim?"

"Well, as a rule I'm only interested in the food but I couldn't help asking what this is, seems it's called 'DECORPLAST'."

"There's quite a lot of this plastic sheeting about — you see it everywhere nowadays — suppose it's all the same?"

"That's just where you're wrong, Bill, the manager was saying that this is by far the best in all respects."

"Who makes it?"

"Holoplast Limited, and I reckon they know as much about this kind of thing as we do about metal!"

"You're right there — I've seen the Holoplast walls in the new 'admin' block."

"Well I think it's lovely, in fact when I get married I'm going to have it in my kitchen!"

"Trust you Mary, you always want the best — don't you?"

DECORPLAST

THE ARISTOCRAT OF PLASTIC SURFACES

Manufactured by

HOLOPLAST LIMITED · SALES OFFICE: 116 VICTORIA ST., LONDON, S.W.1

Telephone: VICTORIA 9354/7 & 9981. Head Office and Works: New Hythe, Near Maidstone, Kent.

mises must be kept out by screening. Periodically, they can also be attacked and destroyed with D.D.T. or similar means. Do this during the week-end or at any time when the canteen is closed.

Silverfish

These are comparatively harmless, but their presence in food is not welcome. They like the dark, and thrive in damp, sheltered corners. They live on starchy foods and are fairly easy to control by use of insecticides. The best way to prevent their appearance is to get rid of dark, damp and sheltered corners.

Weevils

The term weevil is used here to describe all the small flies and maggots that infest such foods as oat-meal, barley, rice and flour. They can be prevented by regular cleaning of all vessels used to store foods and by the regular turnover of stock. Weevils can be detected in grain by a dusty "cobweb." This will quickly spread from one container to another unless well-fitting lids are provided.

Talking Points

Expendable Spoons

A VISITOR to America commented in a works canteen upon the poor quality of the cutlery used. "They're expendable," she was told. "We buy 'em as cheaply as possible and buy more when they're bent or rusty or broken or stolen."

With metal and labour the price they are, this is an example we could not well follow. But small spoon-shaped stirrers of smooth wood, costing about 10/- a 1,000 are used in some commercial catering establishments. It is an example some canteens might care to follow.

Tender and Tasty

IN America, wider use is being made of monosodium glutamate. This salt flavouring stimulates the taste buds and "improves" the flavour of food: the meat seems "meatier", and the potatoes "potatier". It is also claimed to tenderize meat. The chemical is a by-product of the sugar beet and, as far as science knows at present, does no harm at all—except to deceive the

innocent taste buds. It is available here in one or two commercial preparations.

How to Pack a Picnic

SMALL firms cannot always afford to give lunch as well as tea at a restaurant during the works outings. Several have got over this problem by asking the canteen to provide packed lunches. Here are suggestions for packed meals.

At 2/6 per head. Chicken and ham patty. Raw tomato. Salmon and cucumber sandwich. Apple patty. Raw pear. Cardboard "bottle" of orangeade. Straws.

At 2/- per head. Ham sandwich. Lettuce. Meat patty. Fruit cake. Apple. Orangeade.

At 3/6 per head. Two chicken and ham rolls. Small salad. Salmon patty. Trifle in cardboard cup. Orange. Bottle of ginger ale.

All foods can be prepared overnight and stored in the frig. An early shift of canteen workers can box up at the rate of 40 packs per man-hour.

MABBOTT

COMBINED

TEA URNS & WATER BOILERS ENSURE A GOOD CUP OF TEA



Type J

Details from Dept. "BS"

- Stainless Steel Construction
- Chrome Plated Fittings
- Can be used both as a Water Boiler and a Tea Infuser Urn
- Supplied in sizes of 1 gal-10 gal capacity
- Will fit your Existing Tea Trolleys

Mabbotts of Manchester Est. 1901

MANUFACTURERS

Phoenix Works, Poland Street, Manchester, 4

Collyhurst 1773 (3 lines)

CARTONS DISPLAY BOXES



AMHERST

3261/4

ESTABLISHED 1888

*Experience
Counts!*

BRITANNIA FOLDING BOX CO. LTD.
DACE ROAD, OLD FORD, LONDON



V.C. PANELS

Surfaced with hardwearing KLING-DECOR, FORMICA and WARERITE plastics, V. C. Panels are specially made to withstand the wear-and-tear of industrial canteens. Spilled soup, fruit stains, tea stains, greasy marks—even burning cigarettes—are no longer hazards to be feared. A simple swish with a damp cloth removes all marks in a jiffy.

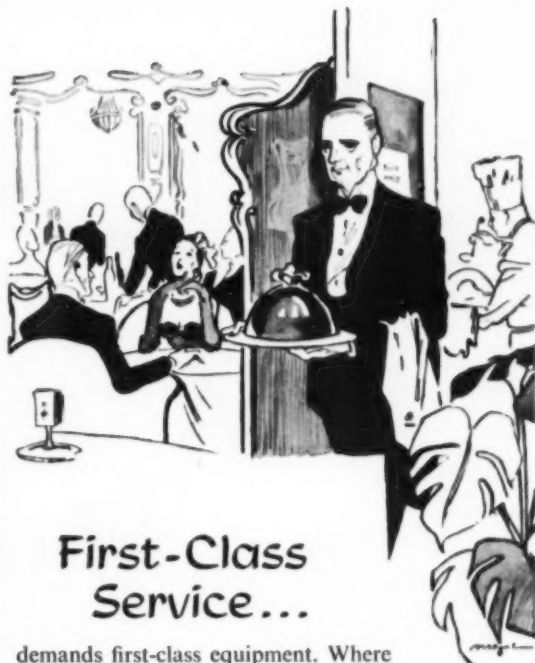
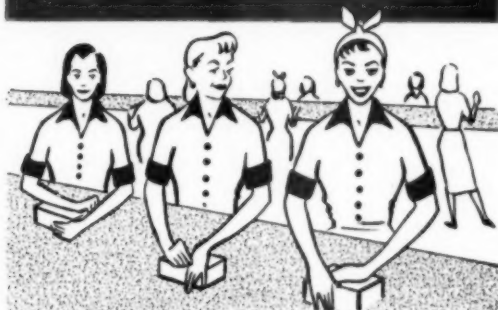
The hard, non-porous surfaces provide an impenetrable barrier to germs. They are unharmed by most hot dishes and take more than the average hard knock without deterioration. V. C. Panels serve the interests of both hygiene and economy.

FOR CANTEENS AND WORKING SURFACES

Available in many attractive and colourful designs, V. C. Panels are ideally suited for canteen table tops and serving counters, and for all working surfaces where hygiene is essential. Prices will be gladly supplied upon request.

V. C. PANELS LTD.
Leyborne Wharf, Horton Bridge Rd.
West Drayton, Middlesex

Telephone: West Drayton 3036-7-8 and 3560



First-Class Service...

demands first-class equipment. Where catering standards are highest, you will find "Peerless" Food Machines in use — as, for example, in the "Queen Elizabeth" and the "Queen Mary". The dependability of "Peerless" machines springs from their being built *up* to a standard, not *down* to a price — with the result that they continue to give perfect service years after others have had to be replaced. Write for details of the "Peerless" range.



PEERLESS FOOD MACHINES

PEERLESS & ERICSSON
1 Carlisle Road, The Hyde, Hendon,
London, N.W.9
Telephone: COLindale 8811

TA 5314

This man has office work absolutely taped

on a

TAPE-RITER

the world's finest dictating
and recording machine.



THE TAPE-RITER is ideal for the busy executive with a lot of 'paper-work'. You can dictate for as long as you please without stopping the machine and the Single Lever Control enables you to erase and correct as you go along. The same machine is used both for transcribing and dictating.

Voice-perfect reproduction from the magnetic tape makes the Tape-Riter invaluable for recording interviews and conferences, where it captures not only the words used but also the tone of voice and the emphasis with which they were spoken. The Tape-Riter has also proved a great success in multiple stores, where it is cutting stocktaking time by as much as one third. The Tape-Riter is neat, light and easily portable.

Compare the price, performance and versatility of the Tape-Riter with any other machine of its kind on the market, and you will see for yourself that it offers a most economical means of securing long and outstandingly efficient service in your business.

most easily operated, too



**HARTLEY
ELECTROMOTIVES
LIMITED**

There are Sales and Service facilities for the Tape-Riter in most large towns in this country and overseas. For further details please write to:

HARTLEY ELECTROMOTIVES LTD., 1A, HARRINGTON ROAD, LONDON, S.W.7. TELEPHONE: KNIGHTSBRIDGE 2511

Business EQUIPMENT SURVEY SECTION

● New for Your Office	91
● Industrial Equipment	96
● Welfare Equipment	100
● Canteen Equipment	102

NEW for your OFFICE

Easier Dictation

ALTHOUGH a re-designed version of the earlier model, the new *Dimafon* dictating machine is virtually a new piece of equipment. It is claimed that the alterations have made it even easier to use than its predecessor and the appearance has also been greatly enhanced. Largely responsible for this is the streamlined and attractive plastic case which has also helped to reduce the weight to 15lb.

Several of the controls have been combined. These include the tone and on-off switches and the record and play-back buttons. The latter are ingeniously arranged to show a red or green light according to the position to which they are set. A double-sided, long-lasting plastic disc is still used for recording. Each side has a duration of ten minutes. A single-sided pliable disc is available for use when it is necessary to send the record through the post.

The erasing magnet is permanent and of double-sided construction. This is most useful in that it not only enables speech to be erased, but also cleans the disc of "crackle" and other interference. A device for fixing to the telephone, records both sides of the



Restyled for easier operation

conversation and will at the same time amplify it through the loud-speaker. The play-back button causes the machine to run backwards at twice normal speed and corrections can be made simply by "overspeaking." A neat carrying case is provided and spare

fuses, needles and a set of rubber feet are supplied in small plastic boxes. A special transcription machine can be provided equipped with a foot switch and a head set, or these accessories can be used with the standard model.

Enquiry Ref. No. O.7/1.

Office Spotlight

THE examination of drawings, maps and diagrams and any work which needs a concentrated light in the right place is made



Puts light where it's wanted

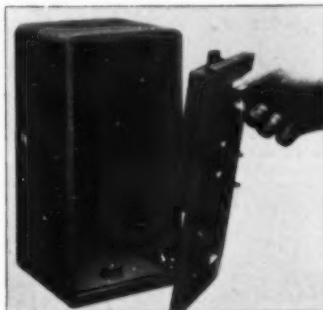
easier by the *Giraffe* lamp. It is a small table lamp of ingenious and modern design. It consists of a pair of "V" legs that slide on a straight bar and a shaded light pivoted on a universal ball joint. The combination of these movements allows the *Giraffe* to throw its light just where it is wanted. The push-button switch is mounted on the top of the shade. Construction is of brass throughout and the finish can be in lacquered brass, chromium plate or one of six colours.

Enquiry Ref. No. O.7/2.

Protection for Roundsmen

OF interest to firms operating fleets of delivery or transport vehicles is a new safe that protects both employees and the money they collect. Strong, compact and inexpensive, the transport safe can be welded or bolted to the vehicle chassis and is strong enough to resist attack for some time.

The safe has two separate locks but the driver is supplied with the key for only one of them. He can-



Safeguards drivers and money

not, therefore, be forced to open the safe, and a notice on the front proclaims this fact. The key to the second lock is kept at the depot but money cannot be withdrawn from it unless the roundsman is present with his key. When the door is unlocked, it can be removed bodily to prevent tampering with the lock when the vehicle is being overhauled or repaired. Money is deposited in the safe through a slot in the top but an anti-fishing device prevents it being withdrawn. Dimensions are 12in. high by 6in. square and the body is made from half-inch welded, toughened steel. A steel plate and bolts can be supplied for attaching the safe to the vehicle and this fastening device is concealed inside the body.

Enquiry Ref. No. O.7/3.

Even Impressions

UNIQUE feature of the new *CHP Princess* hand-addressing machine is that the fixed printing arm guarantees an even impression. With normal hand-addressing machines, the density of the printing depends on the force which the operator uses. On



Unique hand addresser

Business EQUIPMENT SURVEY SECTION

the *Princess*, only the actual platen holding the address plate moves and this is operated indirectly by a curved handle. The density of impression can be adjusted by a pressure control on the printing head. Another feature is the automatic plate feed. Each plate is visible until the print is taken and even then it stays in position until the handle is operated for the next print. Thus, if a document is incorrectly fed, the repeat device can be operated and another print made. A knob on the operating handle is pressed when a plate is to be skipped.

Built into the printing arm is a

counter which records the number of impressions taken. An easily accessible compartment is placed next to the plate hopper and accommodates cut-out pads for use when only part of the information embossed on the plates is to be printed. A standard rack lister can be attached to the machine in a few seconds. The *Princess* is finished in hammer-line grey.

Enquiry Ref. No. O.7/4.

Versatile Dividing

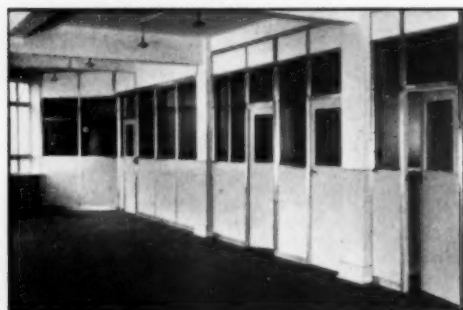
A NEW type of partitioning enables a wide variety of dividing walls, either temporary

or permanent, to be erected quickly and to suit both individual requirements and the site. Flexibility of design is achieved by the use of prefabricated sections.

Structural and glazing channels can be of either timber or extruded light alloy; panels of hardboard or any other sheet material (plywood, veneered boards, plastics, asbestos, etc.), can be provided. For normal applications, the partitioning is 2in. thick, but where sound insulation is required the thickness is doubled. In this case, an insulated panel core medium is employed and the windows are double-glazed. Infinite variations of overall height, dado height, freize depth, glazing bar arrangement and door design can be had.

Wiring runs and switch-gear can be incorporated together with ventilators, louvres and other heating and air conditioning equipment.

Enquiry Ref. No. O.7/5.



An example of the new partitioning. Types are available for all sites and purposes

Storage Desk

GREATER volume of really usable storage space is provided in the *Vedette* desk than in most conventional types. Of all-steel construction, it has two

SHEETS · FORMS · SYSTEMS *Produced to Precision Standards*



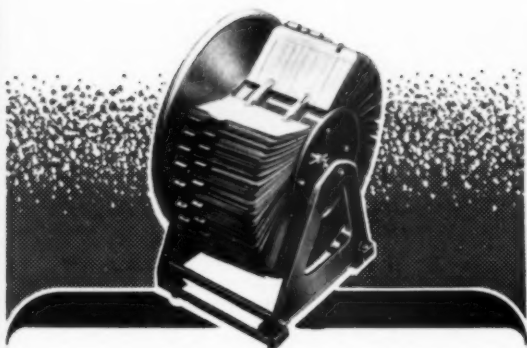
**See what
Twinlock can do!**

Whatever your Loose Leaf requirements—straightforward or unusual—Twinlock experience will ensure satisfaction. Let us help with your needs—prices are reasonable, deliveries prompt.

PERCY JONES (Twinlock) LTD. 37, CHANCERY LANE, LONDON, W.C.2. Tel: CHAncery 8971

Showrooms: MANCHESTER, GLASGOW, LEEDS.

Factories: BECKENHAM, KENT.



RECORD CONTROL

CARDWHEEL is the speediest, easiest—and most efficient of all Reference and Recording Systems!

CARDWHEELS are compact, complete and flexible—cards can be quickly inserted or removed without disturbing the proper sequence of the remaining cards.

CARDWHEELS can be used for ANY card index application where speed of reference and posting is required. Entries can be posted DIRECT on to both sides of the card WITHOUT REMOVAL.

CARDWHEEL Models are available for card sizes 4" x 2", 5" x 2", 5" x 3", 6" x 4" and 8" x 5". Your existing cards can be transferred to CARDWHEEL without any expensive changeover.

by

'CARDWHEEL'



C. W. CAVE & Co. Ltd.

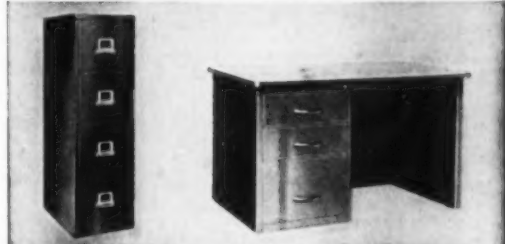
59, HOLBORN VIADUCT, E.C.1.
CENTRAL 3778-9

Represented in Leeds, Manchester, Sheffield, Brighton & Rochester.

JULY, 1953



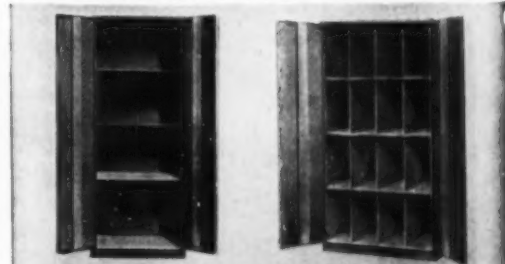
STEEL CUPBOARDS AND DOUBLE PEDESTAL STEEL DESKS.



STEEL FILING CABINETS AND STEEL TYPISTS TABLES.



STEEL CUPBOARDS WITH SLIDING DOORS.



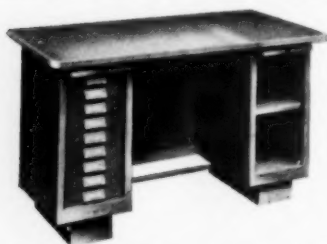
STEEL CUPBOARDS WITH SHELVES OR PIGEON HOLES.

All Harvey Steel Office Furniture and Equipment is of modern design, sound construction, and of the highest quality. Finished in Olive Green stoved enamel it is perpetually durable, fire-resisting, and proof against damp and vermin. Prices are competitive. Send for Catalogue No. BU800

Harvey

G. A. Harvey & Co. (London) Ltd
Woolwich Rd. London, S.E.7

Business EQUIPMENT SURVEY SECTION



Provides much storage space for papers or stationery

pedestals supported on plinths and an optional back skirt. Nine 2in. deep drawers are fitted in the left-hand pedestal. Each will take a ream of paper and each is fitted with a combined handle and index card holder. The right-hand pedestal may also have nine drawers; alternatively, it may contain a full-height cupboard with removable shelf, or it may be a plain supporting pillar.

Slides pull down over the front of each pedestal and lock in position, securing the drawers, etc.

A tubular foot-rest is provided and the desk top is covered in heavy gauge lino. The height (27½in.) is correct for typing; other dimensions are 48in. by 24in.

Metal parts have a stove enamel finish.

Enquiry Ref. No. O.7/6.

Three-size Stapler

NO fewer than three sizes of staple (⅜, ½ and ¾in.) can be used in the *Rosetto Supertacker* without adjustments.

Light in weight and designed so that it can be used in one hand, the stapler has a device that allows very fast reloading. Operation is by a lever above the handle which tensions and then triggers a spring. This drives the staple home (even into hardwoods) without administering a blow. Fragile goods and packages are thus protected from damage.

Because it is so narrow, the *Supertacker* can staple to within

1/16th inch of projections.

Enquiry Ref. No. O.7/7.

Different Desk

OF unusual and modern design, the *HFW6* typist's desk has a number of points that will be appreciated by the girl who uses it. The underslung pedestal has one plain and one deep drawer; the latter is divided by sloping vertical partitions which facilitate the storage and removal of stationery. Further storage space is provided by a fall-front cupboard built into the back of the desk. The dictation slide retracts under the *Formica* working surface. Other parts of the desk are of mahogany. Dimensions are 3ft. 6in. long, 2ft. wide and 2ft. 3in. high.

Enquiry Ref. No. O.7/8.

The *Supertacker* uses three sizes of staple and drives them home by a spring action



on the job on time...



Don't bottle-neck your employees, save those valuable minutes so easily lost queuing at your time recorder. Gents' Automatic Time Recorders are operated by **one hand only**, an important advantage both to employer and employee. The operation is so simple that employees pass through without hindrance, ensuring that **all** are on the job on time.

Cut out time wasted queuing to "clock in", install a Gents' Automatic Time Recorder and help your production to rise. They are available for outright sale or on an economical rental basis and can be operated either from mains supply or from a Gents' Controlled Electric Clock System.



GENTS'
OF LEICESTER

TIME RECORDERS

**ONE HAND OPERATED
AND FULLY AUTOMATIC**

Full details are free, just drop a line for leaflet 280.

GENT & COMPANY LIMITED • FARADAY WORKS • LEICESTER
London Office & Showrooms: 47 VICTORIA STREET, S.W.1. Also at NEWCASTLE BIRMINGHAM • BRISTOL and GLASGOW

Other products include: STAFF LOCATORS • LUMINOUS CALL SYSTEMS • TELEPHONES • PROCESS TIMERS
TOWER CLOCKS • INDICATORS • FIRE & BURGLAR ALARMS • WATCHMEN'S CLOCKS Etc.



MODEL 51 INDUSTRIAL VACUUM CLEANER

Speed, economy and ease of handling are star points with this exceptionally powerful Industrial Vacuum Cleaner. It will rid your factory of money-wasting dust, dirt and swarf—and do it cheaply and quickly.

Light weight, compact design, and pneumatic-tyred wheels ensure effortless "one-man" handling, even in confined spaces. The large capacity dust bag can be removed and replaced in a few seconds.

Approved by Factory Inspectors

Write for Data Sheet 511/50/B

Twin Motors,
Universal AC/
DC, 1200 watts.
Dust Bag Capacity: 1½ cu. ft.
Weight only
110 lbs.



SERVICE ELECTRIC
Co. Ltd.

SECOMAK WORKS, HONEYPOOT LANE,
STANMORE, MIDDLESEX. EDGWARE 5566-7-8-9



WESTWOODS

INDUSTRIAL STEEL SHELVING
Storage Bins, Clothing Lockers, Cupboards
Makers of Steel Storage Equipment for 25 years

JOSEPH WESTWOOD & CO., LTD.
Napier Yard, West Ferry Road, Millwall, E.14.
Phone: EASt 1043 (4 lines)

IT'S
WONDERFUL
WHAT A
RUBBER BAND
WILL DO!



Almost every manufacture has one process or more in which rubber bands—of a suitable size and gauge—can speed up production and cut costs. We will gladly send an expert to show you where and how rubber bands could save you time and money. Simply 'phone or write to us:—

COOMBS of WIMBLEDON

Sole makers of 'STANDARD BRAND' Rubber Bands
(Samples on request. Please mention this publication)

H. A. COOMBS LTD.
Standard Works, Richmond Road,
Wimbledon, S.W.20.

'Phone: WIMbledon 6555.
'Grams: Absentment, Wimble, London.

**we can
help to sell
your products . . .**

During the last half-century we have specialised in stimulating sales for many enterprising business concerns. We have continually held our finger on the pulse of all industrial markets and have acquired an intimate knowledge of the right sales approach.

Our service department, staffed by a fully qualified team of experts, is ready to advise and assist you.

G. F. TOMKIN LIMITED

designers of fine
sales literature



copy writers and
colour printers

501 GROVE GREEN ROAD, LONDON, E.11

**. . . telephone
LEY 1164/1165/7396**

INDUSTRIAL EQUIPMENT

MECHANICAL HANDLING

Carries Round Curves

CHIEF advantage of the Stuebbe Fold-Belt conveyor is that it can follow a curved path in any plane. It is simple, light and compact and can be used for moving either bulk materials or unit loads.

The belt is assembled from separate trough-shaped plates, each either 20 or 27½ in. long. The plates are made of rubber or other flexible material and have transverse corrugations at regular



Left, section of a Fold-Belt conveyor showing a gradient and a curve

intervals which help to maintain the correct shape under load. Metal plates bonded to the underside of the belt provide further stiffening. While the belt retains its trough form under all conditions, the flexible corrugations enable it to curve either laterally or vertically. The 25½ in. wide belt can follow a curve of only 8 ft. radius and, exceptionally steep gradients are also possible.

The plates are mounted on trolley units that run on rollers in the steel channel tracks. The rollers are rubber-covered to reduce noise and wear. The trolleys are connected by a chain which transmits the drive from the motors, which are 10 h.p. electric units fitted at intervals of about 100 yds.

Most economical operating speed is 140 ft. per minute. At this rate, the capacity of the 31½ in. wide belt is about 200 tons per

hour. Loads can be discharged over the reversing pulley or (by tilting the conveyor) at any intermediate point.

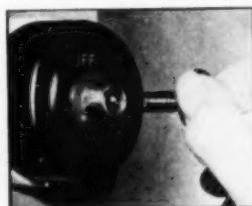
The Fold Belt can be arranged as either a single or double-run conveyor. Since the track sections, plate units and drive chain are all supplied in standard lengths, the conveyor can be quickly shortened or lengthened to suit all requirements. The drive is reversible.

Enquiry Ref. No. F.7/1.

ELECTRICAL EQUIPMENT

Tamper-proof Switch

IT is sometimes desirable in a factory to ensure that lights can be switched on and off only by authorized persons. The new



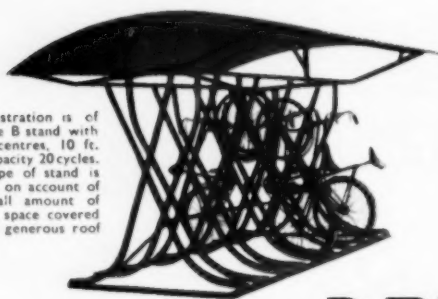
Right, the rotary key-operated Tok switch

ABIX

CYCLE STANDS

The Home of the British Cycle

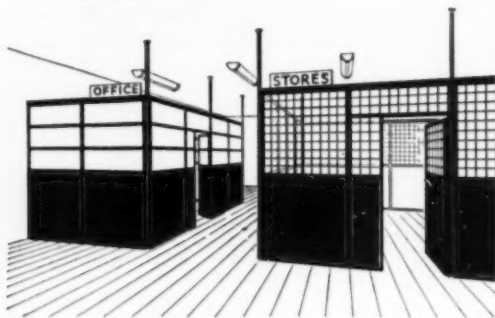
Abix Cycle Stands are constructed of steel throughout, stove enamelled green. Roof sheeting is normally of galvanneal corrugated sheet steel. If required, sheeting can be supplied in Aluminium, Asbestos or Robertson Protected Metal.



The illustration is of our type B stand with 12 in. centres, 10 ft. long, capacity 20 cycles. This type of stand is popular on account of the small amount of ground space covered and the generous roof cover.

STEEL PARTITIONS

Abix partition, are light, strong and fire resisting. Suitable for office or factory, they can be erected by comparatively unskilled labour. Catalogue on request.



ABIX

(METAL INDUSTRIES) LTD
FACTORY EQUIPMENT SPECIALISTS
Taybridge Works, Taybridge Road, Battersea, S.W.11
Telephone: BATTERSEA 8666/7

range of Tok rotary key-operated switches is designed for this purpose. Models are available with 5, 10 and 20 amp. capacities and for voltages up to 600 d.c. or a.c. The design of the mechanism ensures a very quick make-and-break. Arc dampers are provided on switches designed for use on voltages higher than 250.

Over 50 switching sequences are available in each style; an indicator, visible through a slot in the moulded cover, shows the switching position.

Standard switches have a plain key and are made for surface or conduit box mounting. Special types can be supplied for mounting on the backs of panels or fitted with a cylinder-type lock and key.

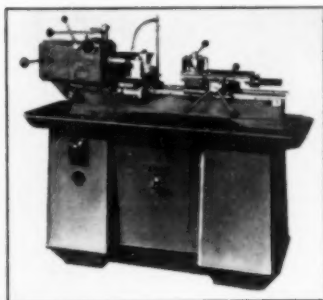
Enquiry Ref. No. F.7/2.

MACHINERY

Sturdy Capstan

THE Little John $\frac{3}{4}$ in. capstan lathe is cleanly designed and sturdily constructed. Among features which make for easy control and operation are the infinitely variable spindle speeds of between 290 and 1,750 r.p.m. obtainable through a patented drive, the centralized controls and the fact that power feeds can be fitted to turret and saddle.

The electrical equipment is simple. Flush-mounted start and



Cleanly designed, sturdily constructed and simply controlled lathe

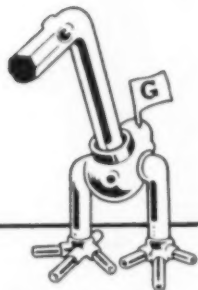
stop push buttons, the coolant pump switch and the isolator switch are mounted on the cabinet. The suds equipment, with motorized pump unit, is self-contained and is located inside the cabinet, but it can be withdrawn for cleaning.

Capacity through the collet is $\frac{3}{4}$ in. and the height of the centres is $5\frac{1}{4}$ in. A bar feed mechanism and a wide range of tooling equipment is available.

A multi-plate clutch is fitted for

STORAGE RACKING

*it's no longer
a problem
we know
the answers*



Storage Racking? Yes, and every other form of tubular structure yet imagined. Send your problem or write for details.



KEE KLAMP

REGISTERED TRADE MARK

TUBULAR STRUCTURES

THE GEO. H. GASCOIGNE CO. LTD.
507 GASCOIGNE HOUSE, READING, BERKS

Telephones: Reading 4831-2-3; 5067-8-9; 2273-4-5.

Wherever there's



NOISE


there's need for a . . .

BURGESS Acousti-Booth

Ever felt awkward on the telephone—unable to catch the client's name or what he was saying to you? Undoubtedly you have! And all the time you knew that the "bad line" (the excuse you probably made for your poor telephone reception) was caused by noise disturbance at your end.

Telephone-frayed nerves become a thing of the past when you install a BURGESS ACOUSTI-BOOTH. Experience the relief of being able to phone without trouble in the midst of noise. Ask any man who owns one of the many thousands now in use.

Write for Bulletin B.P.141/2 S.C.B.



Burgess Products Company Limited, Acoustical Division, Hinchley, Leics.



But for Advertising Gifts—There is no finer quality, better value, or wider selection than can be found in the

Reedoh RANGE

Ask at once for illustrated catalogue and price list B/5.

RICHARD HOCHFELD (LONDON) LTD.,
28 ARCHWAY RD., LONDON, N.19.
*Grams Booth, Nonsuch, London, Tel. ARC 4388

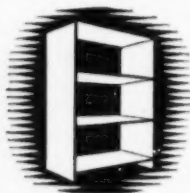
● **EXCEPTIONAL
OFFER OF
NEW STEEL
SHELVING**
Many types and sizes
available
**WRITE STATING
REQUIREMENTS**

ROCO PRODUCTS LTD., 28, CHERRY LANE, BRISTOL.

Example: SHEET SIDED RACKS
6ft. high, 3ft. wide,
15" deep, 4 shelves

77/6

delivered free U.K.
Extension bay 57/6
With 6 shelves 93/-. Extension bay 71/- dd. free U.K.



INDUSTRIAL EQUIPMENT

Continued from page 97

starting and stopping the spindle and the bed surfaces are all hardened and ground.

Enquiry Ref. No. F.7/3.

PORTABLE POWER TOOLS

Electric Carpenter

THE Senior router is a portable electric machine weighing 21lb. which can be used for a variety of woodworking operations. Control of the machine is made easy by large grip handles placed low down and wide apart.

The no-load speed of the spindle is 18,000 r.p.m. and collets are available to take $\frac{1}{8}$ in. and $\frac{3}{16}$ in. diameter shanks. An important feature of the router is the ease with which depth of cut can be adjusted in stages down to 1/64in.

A range of accessories for dovetailing, grooving, cross-cutting,



Easily controlled router

etc., is available and the machine can also be used in a stand for mass production of small parts with templates.

A complete outfit can be provided in a portable wood case con-

FIRE! PRODUCTION LOST BUT FOR **NU-SWIFT!**

A spark...a flash...fire blazing...dial 999! But for at least five minutes that blaze will be YOURS alone! Reliable Nu-Swift is the world's fastest and most certain fire-killer.

NU-SWIFT LTD. • ELLAND • YORKS
In Every Ship of the Royal Navy

taining three dozen cutters, guides, spanners and keys, etc., as well as the machine itself.

Enquiry Ref. No. F.7/4.

AIR CONDITIONING

Protected-Motor Fan

MAIN feature of the Tornado Bifurcated Fan Unit is that the motor is housed in a separate chamber so that it is isolated from the fumes exhausted by the fan. The main application of the unit is to the mechanical extraction of dust or fume-laden air or gases; obnoxious, corrosive or inflammable gases can also be dealt with at reasonably high temperatures.

Isolation of the motor is achieved by splitting the fan casing so that the fumes pass along a duct around it. A further point is that the motor, being open to the atmosphere, can work in a reasonably low ambient temperature with quite high temperatures in the surrounding duct. In spite of its position, the motor is readily accessible.

Should it be necessary to remove the fan and motor at any time for repairs or maintenance, the plant can continue working by means of natural draught.

The normal impeller is a one-piece unit of silicon-aluminium alloy, but for additional protection it can be anodized or painted. To meet more drastic corrosive conditions, the impeller can be rubber covered, or an alternative design incorporated which has a cast iron centre and blades of special bonded plastic sheet.

Standard units are available in four sizes—10, 12, 14 and 16 inches—but larger models can be supplied.

Enquiry Ref. No. F.7/5.

GAUGES & TOOLS

Time-saving Tool

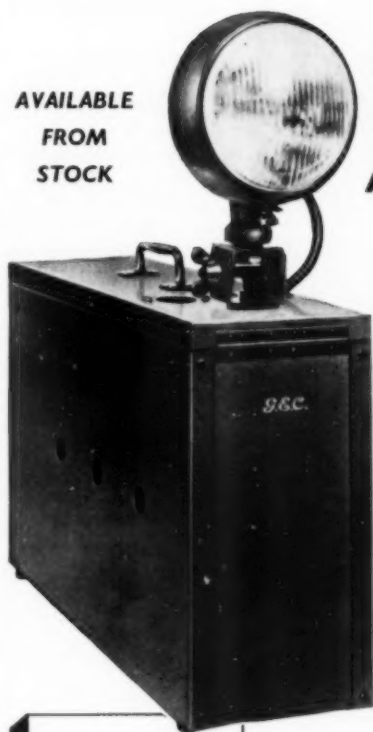
A USEFUL aid for the factory is the Great Skua, a three-purpose tool which can cut time on those "odd jobs" which always have to be done.

The three purposes of the Skua are: to loosen screws, to tighten screws and to loosen nuts and bolts. It is claimed that it will loosen the most immovable and obstinate of slotted-head screws. Used as an ordinary screwdriver, it fulfils the second purpose and tightens most slotted-head screws. The third application—loosening nuts and bolts—is achieved by reversing the tool and attaching standard box sockets.

Enquiry Ref. No. F.7/6.

IN ANY EMERGENCY

AVAILABLE
FROM
STOCK



**POWER FAILURES,
SHORT CIRCUITS,
ACCIDENTS, FLOODS,
etc.**

**THIS
G.E.C.
EMERGENCY
LIGHTING SET
automatically
TAKES OVER**

Totally self-contained with lamp battery and charger in one case. Completely automatic. Always kept fully charged from the mains. Renewal of mains supply after failure immediately resumes charging. Operates on 100/120v or 200/250v A.C. supplies of 60/100 cycles. Each unit lights one or two 6v lamps up to a maximum of 60w.

A sudden blackout is always inconvenient, sometimes dangerous and possibly fatal. Fortunately you can completely eliminate the risk of damage or danger from light failure by installing one or more G.E.C. Emergency Lighting Sets at strategic points. You can then forget your fear of power failure from whatever cause. Whenever the mains go off these G.E.C. Emergency Lights automatically switch on, providing adequate illumination at the crucial moment of break-down and for anything from 1½ to 5½ hours afterwards, according to the lamp used.

THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2

You can **MAKE**
almost **ANYTHING** with

ROCANO

SLOTTED STEEL ANGLES

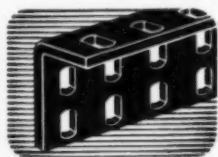
1" 2" and 3"

**ALL SIZES bolt together
to make**

**RACKS,
BENCHES, PARTITIONS,
GUARDS, TROLLEYS, etc**

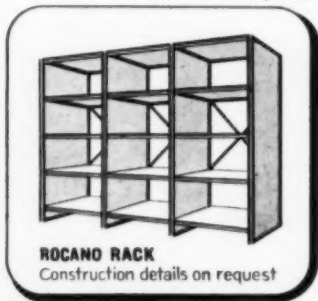
Write for brochure

**ROCANO LTD.,
28, CHERRY LANE, BRISTOL.
Tel.: 27628.**

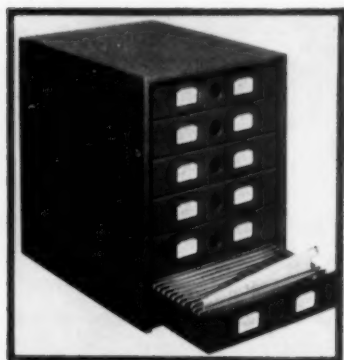


3" x 1½" x 14g. x 10'
£7. 5. 0. per 100 ft.
2" x 1" x 14g. x 10'
£6. 17. 6. per 100ft.
1" x 1" x 14" x 10'
£6. 2. 6. per 100ft.
Tee. 2" x ½" x 10'
£6. 2. 6. per 100ft.

Price reduction for quantities



ROCANO RACK
Construction details on request



Eltray SAVES STENCILS

Stencils are usually discarded after a single run for lack of suitable storage. With the new Eltray system they can be kept in perfect "working order" and used again and again. The used stencil is always accessible, found at a glance when a further run is required.

The cabinet is stove enamelled in wrinkle finish. Each of the six drawers in smooth eggshell grey holds 25 stencils on separate frames preserved permanently in a transparent non-stick wrapper. Single drawer units available.

Full particulars from:
ELTRAY FILING SYSTEM LTD
10, Tottenham Mews, W.1.
Tel: phone: LAngham 2226.

TARPAULINS FOR HIRE

S. LOMAS & Co.
(TARPAULINS) LTD.
**WARD ROAD WORKS,
LONDON, E-15**

MARyland 2616

the CASH REGISTER to reckon with!

**ANALYSES,
ADDS AND LISTS
PRICE £90**

Deliveries Ex Stock

H.P. TERMS ARRANGED

THE REGNA CASH REGISTER COMPANY

Proprietors: The Joeli Safe Co. (London) Limited
7, York Place, Adelphi, London, W.C.2. TRAlfar 3718
Irish Republic Agents—Joeli Products 1, Carroll's Quay, Cork.

WELFARE EQUIPMENT

Indoors and Out

STRICTLY speaking, the new Magchair has been designed for general use in the garden or the home, or to take in the car for week-end trips to the country. Its interest for the welfare department is, however, fairly obvious since it can be used for audiences at sporting events, staff parties, theatrical events and so on in places where the floor has to be cleared.

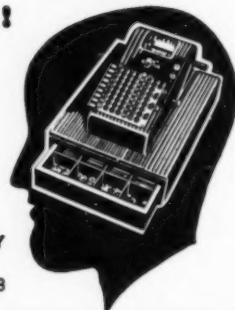
The chair weighs only 5lb., is made of alloy, folds flat, stores neatly, has a long life and is re-



latively cheap. For outdoor occasions, there is an ingenious arrangement by which the canvas back rest is stripped off and used as a carrying bag. This covering is available in red, blue, green, black, yellow and brown.

The height of the chair is 31in., width 24in. and height from the ground 16in. The design is proof against collapse even when the chair is not fully extended.

Enquiry Ref. No. W.7/17.



Some MEN don't seem to understand

the importance of the welfare side from
the woman's angle

By the simple depression of a lever the Barrywald Sanitary Incinerator will automatically and effectively destroy sanitary towels, surgical dressings, documents, etc., solving a vital and major welfare problem in **Factories, Offices, Institutions,** etc.

△ The only Incinerator incorporating our Patent Safety Devices.

The BARRYWALD^{REGD.} SAFETY AUTOMATIC INCINERATOR

Patent Nos. 555062—621085 and corresponding Foreign Patents

Awarded the Certificate of the Royal Institute of Public Health and Hygiene

Supplied to:

I.C.I., Ltd.
Lever Bros. & Unilever, Ltd.
Vickers Armstrong, Ltd.
Monsanto Chemicals, Ltd.
Dunlop Rubber Co., Ltd.
Ever-Ready, Ltd.
Fodens, Ltd.
Ford Motor Co., Ltd.
Hoover, Ltd.
Jowett Cars, Ltd.
Monotype Corporation, Ltd.

National Cash Register Co., Ltd.
Singer Manufacturing Co., Ltd.
Shellmex & B.P., Ltd.
Short Bros., Ltd., etc.



ECONOMICAL
EFFICIENT

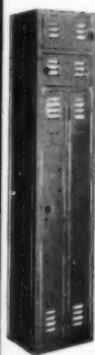
FOOLPROOF
INDISPENSABLE

SANIGUARD APPLIANCES Limited

62, LONDON WALL, LONDON, E.C.2.

Telephone: MONARCH 4922-4923

DIVISION OF ALLIED METALS LTD.



Quality at the RIGHT PRICE

Helmsman

TWIN TYPE STEEL CLOTHES LOCKERS

These lockers provide separate accommodation for two persons and take up 37½ per cent. less wall space than old-styled lockers.

OTHER TYPES ALSO AVAILABLE

Price
£4 - 15 - 0
per person
£9 - 10 - 0 per Twin
Lockers.

Standard size: 72" x 15" x 12", other sizes 15", 18" and 20" deep (the last two sizes have rails for coat hangers).



The

"VEDETTE" ALL STEEL DESK

Nine drawers for each unit, removable shelves in cupboard. Available with two drawer units, two cupboard units or one pedestal and plain leg. Size 48" x 24" x 27½" high. Finished stove enamel, with line top.

★
Mr. Quin at
Larkwood
4411 will
answer your
enquiries.

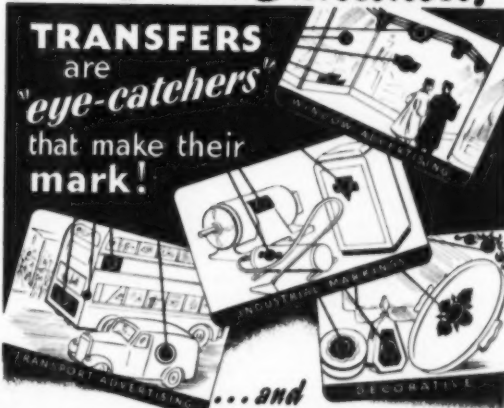
As the makers we offer:
Quantity discounts; Special
prices for complete installa-
tions; Normal business credit
terms; Prompt delivery;
Choice of colours.

W. B. BAWN & CO. LTD. Byron Wks, Blackhorse Lane, E.17

Price from
£12 - 9 - 9
plus tax £2-9-3
(as illustrated
£20-15-3 plus tax
£4-1-9)
Choice of ten
designs.

Your Silent Salesmen!

TRANSFERS
are
"eye-catchers"
that make their
mark!



"Astra" Transfers are the answer

- BRILLIANT
- PERMANENT
- ECONOMICAL
- EASY TO APPLY
- LET US QUOTE YOU

For specimens, designs and quotations, write or phone.

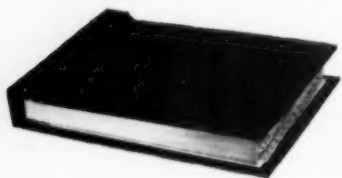
Window Transfers and Pellets, Bus-back and Transport markings. Brilliantly coloured—eye catching—"Astra" Cellulose Waterslide Transfers are doing their job—the vital link with your product at point-of-sale. Use this practical method to promote bright selling aids.

To make your mark. Transfers are the easy way of brand-marking your products. Also for industrial markings including decoration.

ASSOCIATED TRANSFERS LTD., 43 Avenue Chambers, Southampton Row, London, W.C.1 Telephone: Holborn 9082, 8141-2

ASSOCIATED TRANSFERS LTD.

Why do so many firms use



ROBIN LOOSELEAF BOOKS?

Write for
Illustrated
Catalogue

*... because they are excellent for
all kinds of business records*



The looseleaf covers are made in 10 sizes from 5" x 8" to 13" x 16".

The leaves are supplied ruled and printed to customers' requirements.

Several popular record leaves are stocked

There are "Robin" Looseleaf Ledgers for the smaller business and the professions.



Makers: J. W. RUDDOCK & SONS LTD · LINCOLN

THE LIABILITY IS YOURS

Slippery floors are dangerous and unnecessary. All who hold positions of responsibility whether in Offices, Municipal Buildings, Hospitals, Hotels, etc. should insist that a *non-slip* polish is used in the interests of safety and efficiency.

FURMOTO

NON-SLIP FLOOR CREAM

Supplied in $\frac{1}{2}$, $\frac{1}{4}$ and 1 gallon tins
also in 5 gallon drums

Sole Manufacturers:

FURMOTO CHEMICAL CO., LTD.
1/3 BRIXTON ROAD, LONDON, S.W.9.

DUSTSHEETS, WATERPOOF COVERS and TARPAULINS

New or reconditioned. Sale or Hire.
Speciality

Fully reconditioned, waterproofed and re-rope ex-Railway Tarpaulins approx. 20' x 14' £5. 14' x 10' 50/-
Any quantity carriage paid from stock.

STAYTITE COVER CO.,
Springfield Mills, Preston.

'Phone: 2198.

MASONITE PRESWOOD is so reliable . . .

Masonite Preswood has been used in industry for more than 20 years, and has proved its quality. Panelling, cupboards and fittings, signs and displays.

Samples and details
from:

Masonite
Ltd.

Bevis Marks House,
London, E.C.3.
AVenue 2846.

Registered Trade Mark



CANTEEN EQUIPMENT

Warming and Mixing Combined

A NEW method has been developed for heating the bowls of a well-known range of mixing machines. This is the *Isomantle*, an electric blanket type of element which is wrapped round the hemispherical portion of the bowl and enclosed in a sheet



metal casing insulated with fibre glass. The heating elements vary from 750 to 3,500 watts, according to the size of the bowl, and a neat control is available to vary the temperature for the job in hand.

Enquiry Ref. C.7/21.

Economical Dishwasher

RECENT addition to the range of dishwashing machines is the *Wynn*, which has a capacity of well over 1,000 pieces of mixed crockery an hour. The machine is neatly designed, measuring only 28in. square by 40in. high. The price is competitive, but hire purchase terms are available.

Water from the mains is pumped by a centrifugal pump and driven by a f.h.p. motor. It is heated by electric immersion heaters, thermostatically controlled at 145 degrees F. for the detergent water and 190 degrees F. for the rinse. Alternatively, hot water from the factory or office boiler can be used if available.

The machine is made of stainless steel with stove-enamelled main frame and bottom side panels. Controls are simple but adequately fused.

Enquiry Ref. C.7/22.

CLASSIFIED ADVERTISEMENTS

AGENTS WANTED

Agents wanted with established connection amongst industrial concerns to handle Paper Towels on a commission basis. Write Box No. 1182 c/o BUSINESS, 180 Fleet Street, E.C.4.

APPOINTMENTS VACANT

General and Sales Manager required to take charge of an established Car Sales Showroom with £200,000 annual turnover, and situated in the Midlands. Absolute honesty, with good knowledge of market conditions and sales ability are essential. When this is proved the possibility of a directorship may be considered. All letters will be answered in confidence. Box No. 1188 c/o BUSINESS, 180 Fleet Street, E.C.4.

O. & M. London Company with large clerical and warehouse staff is expanding its Organisation and Methods Department, and wants a man well versed in this kind of work to run it. The job is permanent, pensionable and of great scope. Write, giving age, full particulars of previous experience and salary required both now and in five years time to Box No. 1189 c/o BUSINESS, 180 Fleet Street, E.C.4.

BUSINESS OPPORTUNITIES

Opportunity arises for an active partnership with some capital investment in a retail office furniture and office sundries business with tasteful showroom in a New Town. Alternatively will consider selling outright. Reply to Box 1181 c/o BUSINESS, 180 Fleet Street, E.C.4.

FOR SALE

One Dictograph Cylinder machine, complete. In excellent condition, £40. Apply: L. G. Harris & Company, Ltd., Stoke Prior, Worcestershire.

Five 150 capacity super automatic dial time recorders—suitable for operation on International Hourly Supervision Master Clock system only. Box No. 1183, c/o BUSINESS, 180 Fleet Street, E.C.4.

Push Button—Dual Selector Auto-Typist. Little used. Good condition. Offers wanted. Box No. 1186 c/o BUSINESS, 180 Fleet Street, E.C.4.

Ediphone Executive Dictator, Secretarial Transcriber and Shaver, also Telediphone, sold separately. Holdings, 39 Mincing Lane, Blackburn.

One Acoustic Booth for Telephone for sale. Good condition. Offers Box No. A.B. 90, 10 Hertford Street, London, W.1.

Dictaphone, Electronic Cylinder Model de luxe, CB Transcriber complete and shaving machine. £100 box No. 1187 c/o BUSINESS, 180 Fleet Street, E.C.4.

Nine Column National Adding and Analysing Machine, electrically operated; first class condition. Box 1184 c/o BUSINESS, 180 Fleet Street, E.C.4.

Gestetner Duplicating Machine, Model 55E/B. Brief size, electrically operated, complete with all equipment and cabinet. Excellent condition. £60 or near offer. Apply Box No. 1185 c/o BUSINESS, 180 Fleet Street, E.C.4.

Three Banda Spirit Duplicators in good condition—model 18 electric. Voltage 220-23 A.C. (Being replaced by model 170 E.S.). Apply Supplies Manager, The Salvation Army Assurance Society, Ltd., 220-226, Tottenham Court Road, W.1.

RECORDON DICTATING MACHINE for sale, complete with all accessories. A new What offers? Box No. 1192 c/o BUSINESS, 180 Fleet Street, E.C.4.

WELBECK 2444

DUPLICATING 24-hour Service

Comprehensive printing facilities

FEMBERPRINT,

53, Paddington Street, W.1.

ADDING—CALCULATING— ACCOUNTING MACHINES

SALE OR HIRE

M. E. GREYER,

Gwydir Chambers, 104, High Holborn,
London, W.C.1. Tel.: HOL 0208.

For Sale (cont.)

Kardex Cabinets in sizes 8 x 5, 6 x 4, 5 x 3, 11 x 6.

Cope-Chat, 6 x 4, 8 x 5.

Seldex, 8 x 5, size, Postindex, 8 x 5.

Shannon, 8 x 5, 6 x 4.

Strip Index Panels, 300, 6 x 4.

8 x 5 at 5s. each.

Please send for our latest list of used Visible Record Cabinets from England's largest stockist. Chubb Fire-proof Ledger Trolleys. Duo-Britannic Calculators. Sumlock Sterling Calculators. Plus Adders, Sterling Decimal. Office Tables, ex-Ministry of Works, 4' 6" x 2' 6", only £4 5s. 0d. each. 100 available. "The Office Centre", Commercial Equipment Co., 68/70 Queen Street, E.C.4.

FULL STEAM IN FIVE MINUTES with B. & A. Electrode Boilers. Used by British industries for 20 years. No boilerhouse, no flue, no attendant needed. The most compact and convenient steam raisers available, can go beside machines using the steam. Write for leaflet 107 Bastian & Allen, Ltd., Ferndale Terrace, Harrow. For disposal: a lot of tickets for Automatic canteen machines in standard denominations, following change in canteen procedure. Box No. 1191 c/o BUSINESS, 180 Fleet Street, E.C.4. Copycat to take sheets 18" x 14". Good condition. £10. Box 1190 c/o BUSINESS, 180 Fleet Street, E.C.4.

Tarpaulin sheets selected Ex-Railway Tarpaulins Fully Reconditioned and Re-rope. Approx. size 20' x 14', also 14' x 10', and 10' x 7' Turners Tarpaulins, Queen Street, Denton, Manchester. Phone Denton 2804.

For Sale—cont.

MISCELLANEOUS

DICTATING MACHINE CONSULTANTS established thirty years prepared to advise you on the type of System best suited to your requirements, and to supply most good makes of electronic and acoustic machines. Consult the dictating machine specialists: Dixon's, 229 Oxford Road, Manchester. Telephone ARDwick 4269.

OLD Established Engineering Company require representatives to sell new range of Metal Laboratory and Office Furniture. Preference given to applicants with connections in this trade. Own car an advantage. Write giving full details of experience etc., to GRUNDY (TEDDINGTON) LTD., SOMERSET WORKS, TEDDINGTON, MIDDLESEX.

Circularising campaigns, mailing lists, envelope addressing (one of the largest organisations in the country); highest class duplicating (all sizes), words and illustrations, black or colour; specialist typing; facsimile document copying. IMPRINTS, 28 Chapel Street, Liverpool 3.

PATENTS

The Proprietors of Letters Patent No. 613626 relating to CALCULATING AND OTHER OFFICE MACHINES desire to grant licences under the patent to interested parties on reasonable terms for the purpose of exploiting the same and ensuring its full commercial development in this country. Enquiries to be addressed to Cruikshank & Fairweather, 29 Southampton Buildings, Chancery Lane, London W.C.2.

WANTED

Cash waiting for redundant Kardex, Roneo-dex, Office Machines and all types of Equipment. Write Box No. 1168 c/o BUSINESS, 180 Fleet Street, E.C.4.

★ THIS NEW BOOK

is a complete self-contained and most efficient course in effective speaking for business people.

SPEAKING is your BUSINESS by VERA GOUGH

based on long training experience here and in the U.S.A. 8/6 net.

Many bookshops already have it in stock. Any shop or stall will get it quickly for you. Published by Bell, 6 Portugal Street, London, W.C.2.

DUPLICATING

— Twenty-four hour service

TYPEWRITING

— Letters, Manuscripts etc.

Typewriter Supplied and Repaired Office Equipment and Printing.

Elliot Typewriter & Office Equipment Co.,
25 Abingdon Road, Kensington, W.8.
WESTERN 0832

REMINGTON ACCOUNTING MACHINES

for prompt delivery. All equipment rebuilt and fully guaranteed for one year. Maintenance service available on expiry of guarantee. Free preparation of systems, training of operators and installation services.

H. H. DURHAM LTD.,

85, BLACKFRIARS RD., LONDON, S.E.1.
Tel.: WATERloo 6881-2.

ITEM 5984

Experienced Staff Supplied

Comprehensive Secretarial Services. Confidential Accounts, Tabulated Figure Work & First-class Duplicating Executed. Complete Satisfaction Guaranteed by Personal Attention.

STONE'S SECRETARIAL SERVICES & STAFF BUREAU,
446, The Strand, London, W.C.2.

THE WORLD'S GREATEST BOOKSHOP

FOYLES
FOR BOOKS

All new Books available on day of publication. Secondhand and rare Books on every subject. Large stock of Business Books. 119-125, CHANCERY CROSS ROAD, W.C.2. Gerrard 5660. Open 9-6 (inc. Hols.).

Every requisite for the Office

- Carbon Paper, Typewriter Ribbons, Printing, Stationery, Account Books
- Typewriter Repairs and Maintenance.
- An opportunity to quote would be welcomed with prompt attention
- Why not give us your next enquiry

RING

The Dees OFFICE SUPPLIES CO.

36 Camomile Street, E.C.3.

Phone: Avenue 5088

ALPHABETICAL LIST OF ADVERTISERS

Abix (Metal Industries), Ltd. ... 96	Gascoigne, The, Co., Ltd. ... 97	Peerless & Ericson, Ltd. ... 89
Addressall Machine Co. ... 79	General Electric Co., Ltd. ... 80, 99	Pemberprint ... 103
Art Metal Construction Company ... 19	Gent & Co., Ltd. ... 94	Petty & Sons, Ltd. ... 70
Associated Transfers, Ltd. ... 101	Gestetner, Ltd. ... 31	Pirie, Appleton, & Co., Ltd. 13
Avery, J., & Co. ... 83	Gledhill-Brook Time Recorders, Ltd. ... 30	Pitman, Sir Isaac & Sons, Ltd. 104
Bartlett, G. F. E., Ltd. ... 84	Gosherson, John, & Co., Ltd. 76	
Bawn, W. B., & Co., Ltd. ... 101	Grant Production Co., Ltd. 78	Reliance Telephone Co., Ltd. 104
Bell, G., & Sons, Ltd. ... 103	Greyer, N. E. ... 103	Remington-Rand, Ltd. ...
Blick Time Recorders, Ltd. ... 11		Cover ii, 18
Block & Anderson, Ltd. ... 15	Hartley Electromotives, Ltd. 90	Rocano, Limited ... 100
Britannia Folding Box Co., Ltd. ... 88	Harvey, G. A., (London), Ltd. 93	Roco Products, Ltd. ... 98
British Electrical Development Assn. ... Prospect iv	Haycraft, M. & L., Ltd. ... Cover iv	Royal Typewriters ... 30
British Olivetti, Ltd. ... 17	Hobbs, Savill & Co., Ltd. ... 79	Ruddock, J. W., & Sons ... 102
British Paints, Ltd. ... 33	Hochfeld, Richard, (London), Ltd. ... 98	
British Vacuum Cleaner & Eng. Co., Ltd. ... 20	Holoplast, Ltd. ... 87	Saniguard Appliances, Ltd. ... 101
Burgess Products Co., Ltd. ... 98	Hunt & Colleys, Ltd. ... 4	Sankey-Sheldon, Ltd. ... 77
Burroughs Adding Machine, Ltd. ... 5, 36, 69		Service Electric Co., Ltd. ... 95
Carter-Davis, Ltd. ... 40	I.B.M. United Kingdom, Ltd. 72	Shannon, Ltd. ... 77
Cave, C. W., & Co., Ltd. ... 93	Imperial Typewriter Co., Ltd. 3	Shell Chemicals, Ltd. ... 27
Clarke, John T., & Son, Ltd. 24	International Coin Counting Mch. Co., Ltd. ... 26	Smith, W. H., & Son, Ltd. ... 73
Cole Ventilation, Ltd. ... 9		Spiral Tube & Components, Ltd. ... 83
Columbus-Dixon, Ltd. ... 34	Joeli Safe Co. (London), Ltd. 100	Standard Office Supplies Co. 24
Coombs, H. A., Ltd. ... 95	Jones, Percy, (Twinlock), Ltd. 92	Standard Typewriter Co. ... 103
Copeland-Chatterson Co., Ltd. ... 23		Staytite Cover Co. ... 102
Cushman & Denison, Ltd. ... 26	Kalamazoo, Ltd. ... 35	Stone's Secretarial Services & Staff Bureau ... 103
		Synchrone Co., Ltd. ... 22
Dapag (1943), Ltd. ... 6	Lambart & Smyth, Ltd. ... 80	Taylor's Typewriter Co., Ltd. 12
Dees Office Supplies Co., The 103	Lamson Engineering Co., Ltd. 16	Telegraph Condenser Co., Ltd. ... 10
Dexion, Ltd. ... 8	Lomas, S., & Co. (Tarpaulins), Ltd. ... 100	Thompson & Norris Mfg. Co., Ltd. ... Cover iii
Dictograph Telephones, Ltd. 21		Tomkin, G. F., Ltd. ... 95
E.M.I., Ltd. ... 38	Mabbott & Co., Ltd. ... 88	The Trevor-Johnstone Co., Ltd. ... 32
Edison, Thos. A., Ltd. ... 7	Magneta Time Co., Ltd. ... 18	Typewriters, Ltd. ... 75
Edison-Swan Electric Co., Ltd. 1	Masonite, Ltd. ... 102	
Eliot Typewriter & Office Equipment Co. ... 103	Merchant Trading Co., Ltd. 20	Underwood Business Machines, Ltd. ... 42
Ellams Duplicator Co., Ltd. 74	Milner's Safe Co., Ltd. ... 24	
Elteray Filing System, Ltd. ... 100	Moore's Modern Methods, Ltd. ... 30	V.C. Panels, Ltd. ... 89
Enfield Box Co., Ltd. ... 14	Morris Commercial Cars, Ltd. 29	Victrlec, Ltd. ... 34
English Electric Co., Ltd. ... Prospect xii	Moss, Wm., & Sons, Ltd. ... 16	
Evertaut, Ltd. ... 22	Noble Lowndes Pension Service, The ... Prospect viii	West, A., & Partners ... 14
Fonadek (Branson), Ltd. ... 28	Nu-Swift, Ltd. ... 98	Westwood, Joseph, & Co., Wtd. ... 95
Foyle, W. & G., Ltd. ... 103		Wheeler, H., & Co., Ltd. ... 80
Freder Bros. Paper Mills ... 83	Odoni, Alfred A., & Co., Ltd. 28	Wingrove & Rogers, Ltd. ... 25
Furmoto Chemical Co., Ltd. 102	Office Machinery, Ltd. ... 28	

The Supervision of Personnel

By John M. Pfeffer, Professor of Public Administration, University of Southern California. A study of human relations in management. 454 pages. 35/- net.

Management: Its Nature and Significance

By E. F. L. Brech, B.A., B.Sc. (Econ.), M.I.A. This third edition contains additional chapters on policy and organization. Completely revised in the light of the latest practice. 12/6 net.

British Public Utilities

By J. F. Sleeman, Lecturer in Social Economics, University of Glasgow. A comprehensive survey, of interest to lecturers in economics and social administration and their students, also to those working in nationalized industries and public utilities. 20/- net.

The Supervisor's Guides. No.1

Leadership in the Factory

By John Munro Fraser, M.A. This book is the first in a series of inexpensive guides covering various aspects of the management scene. It analyses those factors necessary for effective leadership on the factory floor. Illustrated. 3/- net.

The Business Doctor

Causes and Prevention of Business Losses and Failures. By Walter Pinner, D. Econ. (Halle-Wittenberg). Written by a practical economist, this book shows that business illnesses can be diagnosed and treated like illnesses of the human body. 18/- net.



SGT MAJORS & CROSS COUNTRY RUNNERS

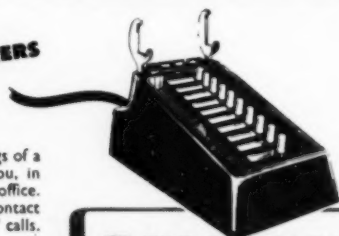
Do you have to possess the voice of a Sgt. Major and the legs of a cross-country runner to keep in touch with your staff, or have you, in the interests of efficiency, installed RELIANCE Loudspeaking Telephones in your office. Think of the time and labour you save—a flick of a switch puts you in immediate contact with any department, at the same time relieving the P.O. switchboard of all 'inside' calls.

Write today for our illustrated catalogue B.23.

THE RELIANCE TELEPHONE COMPANY LTD.

(A Subsidiary of the General Electric Company Limited)

43-47 PARKER STREET, KINGSWAY, LONDON, W.C.2. Tel.: Chancery 5341 (P.B.X.)
Branches throughout the United Kingdom · INTERNAL TELEPHONES · STAFF LOCATION · MUSIC FOR INDUSTRY



RELIANCE
Loudspeaking
TELEPHONES

FOR PERFECT PACKAGING



hand it to



BICYCLES OR BOTTLES, chicks or cathode-ray tubes, we have the right answer to every packaging problem. Countless manufacturers in many industries know that T & N corrugated fibreboard packaging provides their goods with the protection they need and the good appearance they deserve. We should be pleased to advise on your packaging problems—entirely without obligation, of course.

THOMPSON & NORRIS

Pioneers of Corrugated Packaging

THE THOMPSON & NORRIS MFG. CO. LTD.

Head Office & Factory: Great West Rd., Brentford, Middx.

Telephone: EALing 4555

Sales Offices and Factories are localised for maximum economic service

CORSTORPHINE, EDINBURGH Tel. EDINBURGH 67205

SHIRLEY, BIRMINGHAM Tel. SHIRLEY 11171

WARRENPOINT, N. IRELAND Tel. WARRENPOINT 393

Factory also at HISTON, CAMBS.



Advisory Service

We will help to improve your containers or methods of packaging. Our experience and expert knowledge are at your disposal.



Success Story

WHY is the Agaphone dictating machine such a success? Why, in only six months, has it proved so popular with businessmen? The answer is simple, straightforward: the Agaphone has the features, the quality and the superior performance which make it the perfect dictating machine.

It is not the cheapest dictating machine on the market, but it is the best. The value of a dictating machine lies in its reliability, its ability to work—and continue working—every day. The Agaphone will do this, a dependable timesaver, always ready to help you get more minutes out of every hour.

THE Agaphone has been designed and built with care... a few minutes will prove to you what this means. Write, call or telephone the distributors:

Facts

Up to an hour's dictation with the spools of wire held in a foolproof magazine. Can be used for conference recording. Time control enables dictation to be automatically located for playback. Signalling device warns your secretary of remarks, instructions, etc., which are not to be transcribed. Key controls are simple and positive. Small and compact. Handsome appearance. Operates on any voltage and can be used in a car.

Agaphone—costs less in the long run

M & L. HAYCRAFT LTD

24 ST. STEPHEN'S HOUSE, CANNON ROW, WESTMINSTER, S.W.1 WHITEHALL 9618 9